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The Review of Metaphysics

A Philosophical Quarterly

edited by
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The Review of Metaphysics is devoted to the promotion of technically competent, definitive contributions to knowledge, speculative and historical. Not associated with any school or group, not the organ of any society or institution, it is interested in persistent, resolute inquiries into root questions, regardless of the writer's affiliations.

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THE REVIEW OF METAPHYSICS

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METAPHYSICS AND HISTORY

I

To many the very idea of a metaphysics of history may seem absurd. Is it not precisely history itself which in modern times has given the death blow to metaphysics? Is it not the very history of ideas which makes of our metaphysical notions merely the reflection of historical periods and movements? Is it not true, as Croce has said, that this complete historicism which "was at the beginning of the nineteenth century a simple presentiment has been changed into a firm consciousness at the beginning of the twentieth?" It may be so, although one may well doubt it — this firm consciousness being, as I believe, already in process of dissolution. But, even so, historicism is itself a *Weltanschauung*, even if a senseless one — a metaphysics of a sort — and so the metaphysical problem remains.

The term metaphysics was formed at a time when physics and the physical categories constituted the whole of natural science and to describe the field of thought beyond physics. With the development of other fields of knowledge such as the biological and the historical, it has of necessity acquired a much broader meaning. It describes a field of speculative thought which lies beyond the categories of any of these sciences. In the present context the metaphysical is the meta-historical.

The fundamental character of all metaphysical thought is that it is concerned ultimately with the "whole," the whole of reality, and therefore makes pronouncements about the whole. But in so far as in any field of knowledge propositions about wholes appear, that science trenches on the metaphysical. If it is true, as Bergson said, that the second law of thermodynamics is the most metaphysical of all the propositions of physical science, it is not solely, as he supposed, because it is historical, but rather that in its extension to the historical character of all existence, it makes pronouncements about the cosmos as a whole. Similar pronouncements about wholes appear in the humanistic and social sciences. In so far as men allow themselves to make pronouncements about the nature of society or of the state, they will find themselves, if they think the matter through, also trenching on the metaphysical.

There are two points at which metaphysical issues appear most clearly in connection with the field of history; the first in connection with pronouncements upon history as a whole, the second in connection with propositions about the place of this whole, itself part of the totality of things, in the world whole we call the cosmos.

The first of these issues concerns the fundamental division in the more ultimate theories of the historians themselves, namely that between the progressive and recurrence or wave theories; for both are theories of universal history and, by implication, pronouncements upon the historical process as a whole. The second concerns the place of history, as a relative whole, in the cosmic process. Whenever men write on such subjects as nature and history, or evolution and progress, they are concerned with this problem. Both issues are intimately related, as we shall see, but in order that their relation may be understood they must be discussed separately.

The metaphysical character of the first issue is sufficiently clear. That these two theories, the progressive and recurrence, are really metaphysical in their implications is obvious. Both make pronouncements, not only about particular peoples, epochs and movements, but about the historical process as a whole. The progressive theory assumes, at least when thought

out, not only that through the ages "one eternal purpose runs," but also, by implication, "one far off event," whether divine or not, towards which the whole of human history moves, if not indeed of the whole creation of which history is a part. The recurrence theory is not less metaphysical, even if conceived merely as a negation of the former. But it also affirms something positively, namely something about the whole of human history. It asserts that through these same ages certain patterns eternally recur in human history, if indeed they are not themselves aspects of still larger patterns that recur throughout the whole of nature.

These theories are metaphysical, in the first place, because they make pronouncements which, by their very nature, are not susceptible of purely empirical verification. Evidence for individual forms of progression is within the range of empirical knowledge; also evidence for progress in the past within history as a whole. Again, as we shall presently see, such verification is possible for particular cases of regression. But for universal progress or recurrence no such evidence is possible. A further aspect of their metaphysical character appears in the fact that both are concerned with the character of a process that persists through the ages of ages, involving therefore necessarily the entire problem of historical time.

The relation of the first metaphysical issue to the second is also sufficiently clear. If through the whole of history one eternal purpose runs, it seems scarcely possible that this purpose should not include nature also, and that the event, whether divine or not, should not in some way involve the whole of creation. If on the other hand, in history human patterns eternally recur, it seems hardly possible that this recurrence should be other than an aspect of a fundamental cyclical character of nature itself. In sum, while it may be difficult to find formulas to describe the relation of the historical to the cosmic process, they must be sought and these conceptions can not be other than "the grandiose and imaginative conceptions of the philosophers" — in short, metaphysical.

It is with the first aspect of the metaphysical problem that we are immediately concerned. The opposition of these

two historical theories constitutes the first object of study. I shall call this opposition the historical antinomy *par excellence*. There are, to be sure, other historical antinomies, as for instance that contained in the paradox of progress, the antinomy between the *progressus ad finitum* and the *progressus ad infinitum*. Indeed this latter is closely related to the former, for it is precisely the thinking out of what is involved in a *progressus ad finitum* which seems, in the end, to lead necessarily to the notion of an eternal recurrence. For if the end is finite and time infinite, no other conclusion seems possible. It is, however, with the first that we are now concerned, for it is this, as we have seen, that takes us directly into the metaphysics of history.

This historical antinomy appears in two different contexts: first of all in that of history itself, and secondly in the metaphysical context proper, as a problem arising out of the relation of human history to the whole of reality. We shall consider them in this order.

II

THE HISTORICAL ANTINOMY IN THE CONTEXT OF HISTORY ITSELF

A

One or the other of these two schools of historical thought is, I believe, implicit in any historical construction which is more than positivistic. It becomes explicit, however, in the more philosophical historians and philosophers concerned with history. Of those who have made these theories explicit, Hegel, Croce and Rickert represent the progressive, while Vico and Spengler represent the reflux or recurrence theory. It is my contention that the two are not ultimately incompatible as working theories of history, and that the description of history in terms of recurrent patterns is not incompatible with description in terms of progressive movements. In order to see this, however, it is necessary, first of all, to be quite clear as to

what progress and recurrence mean in the description of historical processes.

Progress, as an historical category, dealing with particular historical times and movements, simply asserts that in such a movement, during such a time, a goal immanent in the process has apparently been realized. It is, I think, equally clear what repetition and recurrence in history mean. Quite rightly we say, history does not repeat itself and it does not in the sense that a given event, with its unique localization in historical time, ever returns; but the qualitative character of the event may repeat itself over and over again. It is important to recall that repetition in history is not the same thing as repetition of events in the sense of the doctrine of the uniformity of nature as postulated by physical science: it is characteristic of history and of history alone. What is repeated is not a particular event — repetition in this sense is, of course impossible — but is rather a certain enduring possibility of human nature, arising out of the existential situation of man. Whatever endless possibilities are contained in the inexhaustible fullness of being itself, the possibilities of that part of being we call human nature are, we may well believe, apart from divine miracle, not inexhaustible.

B

To the unbiased observer there can be no question that there is progress in history in the sense of progressive movements. In the sense of the realization of particular concrete "goals," or immanent value intentions, such progressions can be shown and verified by historical science itself. The history of industry and art is made up of stories of particular periods and movements in which there is progressive adaptation of means to ends, or gradual achievement of particular artistic ideals. The same is true of political, religious or any other form of history. Indeed, without the category of progression in this sense one can not write history at all, but merely presents the succession of events in time which we call chronology.

But to the unbiased observer there is also no question that there are repetitions and recurrences of the type defined.

The defenders of the recurrence theory are justified in drawing the parallels upon which their theory rests. The objects of their study, however different their localization in historical time, have qualitative characters which repeat themselves again and again. A revolution or a tyranny is, after all, just that — a revolution or a tyranny, and whether the former takes place in ancient Greece or modern France, the latter the tyranny of a Dionysius or of a Hitler. It is indeed only on the assumption of just such parallels, that any comparative study of different civilizations and peoples can be based. This does not mean, of course, that historical objects are comparable in every respect; sooner or later a point is reached where analogies break down. It simply means that they are sufficiently comparable in the manner described to make understanding possible. The perennial character of certain aspects of history is as much a part of them as is their novelty. We must see them, not only in the latter aspect, but also *sub specie perennitatis*.

Our contention is then, first of all, that there is empirical basis for both theories and that, just as the postulate of progress is the condition of the understanding of certain aspects of history, so also is the postulate of recurrence (of the enduring or permanent possibilities of human nature), the necessary condition of the understanding of other aspects of history. There is therefore from the purely empirical point of view of historical "science" no good reason why they should not exist side by side, as the corpuscular and wave theories of light are said to exist side by side in physics. If, as it is said, the physicist uses the one theory on Mondays, Wednesdays and Fridays, and the other on the alternate days — and this without any compunctions of his scientific conscience — it may not be too absurd to say that the historian is also justified in using one theory for the description and correlation of one kind of facts, and the other for another kind of facts. It is true that both physicist and historian assume that ultimately the theories are not in contradiction, but it is not necessary that, in order to use them, the more ultimate problem should be solved.

Empirically, then, the two theories might exist side by side and yet they might still be logically in ultimate contradiction. Our second contention is that, far from being in such contradiction, the progressive theory, properly understood, actually presupposes recurrence. For there is no progress in any genuine sense without the conservation of that which is achieved, and such conservation presupposes, wherever there is time and becoming, the recurrence in successive times of the same qualitative characters.

That progress is compatible with recurrence is maintained by Toynbee in a passage worthy of being quoted in full. "Certainly," he writes, "in the movement of all these forces that weave the web of human history there is an obvious element of recurrence. Yet the shuttle which shoots backwards and forwards across the loom of time in a perpetual to-and-fro is all this time bringing into existence a tapestry in which there is manifestly a *developing design* and not simply an endless repetition of the same pattern. (*italics mine*). This too, we have seen again and again; the metaphor of the wheel in itself offers an illustration of *recurrence being concurrent with progress*. The movement of the wheel is admittedly repetitive in relation to the wheel's own axle, but the wheel has only been made and fitted to its axle in order to give mobility to a vehicle of which the wheel is merely a part, and the fact that the vehicle which is the wheel's *raison d'être* can only move in virtue of the wheel's circular movement round its axle does not compel the vehicle itself to travel like a merry-go-round in a circular track."¹

This concurrence of progress and recurrence is precisely what I have been maintaining, the only difference being that I have sought to bring out more clearly the logical aspect of the question. Something of this relation men have sought to express, not wholly happily, by the figure of the spiral character of progress in history. Geometrical figures are never very satisfactory when applied to the life of the spirit, but in contrast to such conceptions as circular movement and progress in a straight line, the figure serves to bring out the point at issue.

¹ *A Study of History*, p. 263.

III

INTERLUDE. AN EXCURSUS INTO THE PROBLEM
OF VALUES IN HISTORY

A

It has become increasingly evident from the preceding considerations that the historical antinomy, in one of its aspects at least, has its source ultimately in the relation of time to values. Progress involves the postulation of the increase or enhancement of values — of an increasing purpose and an imperishable goal. Recurrence, on the other hand, appears at least to constitute a denial of this postulate. That which leads men to believe in progress in the more ultimate sense is, as we have seen, not empirical evidence alone, but rather dialectical considerations arising out of the nature of value as such. That which leads them to repudiate recurrence in any absolute sense is equally not empirical considerations but rather, again, such as arise out of the nature of value as such.

Here, then, we come upon an alternative which goes to the very heart of the philosophy of history. On the one hand, we have the view that values in history are particular historical facts elevated to the ranks of timeless universals; on the other hand, we have the view that the values in history, together with the sequences of purpose, and the realization in time which they entail, constitute merely particular facts of history but are not the essence of value at all; it is found rather in the universals which constitute the models and measures of history. My own view is that neither of these extreme views is tenable, but that values are both in and out of time and that, unless we recognize both their transcendent and immanent character, an understanding of history is not possible.

B

Evidently the issues here involve the question of the nature of value or what Bosanquet has called the "essentials of value." In employing this term he proposes, he tells us, "to

fall back upon the characteristics of value which, *apart from sequence in time and selected purposes*, attach to the nature of reality which is perfection." (Italics mine).² It is assumed here that the essential character of value, perfection, is wholly separable from the time process, and that time and duration are not part of the essence of values.

Bosanquet's analysis of value arises out of an examination of the notion of purpose. That examination leads him to abandon the notion of external finality, with its "finite analogy of means to ends," and to substitute for it a doctrine of immanent teleology which transforms the relation of means to ends into a relation of part to whole — in other words, the eliminating of all temporal elements from the notions of purpose and value. Far from being in any sense the essence of value, these supposed essentials are full of contradictions and are mere appearance, the reality behind which is of a wholly different nature.

Of the difficulties involved in eliminating these elements Bosanquet is, of course, not unaware. He admits that to abandon all the psychological, historical and temporal elements in the concept of purpose and keep any intelligible meaning is "no light task." To separate metaphysical perfection from value, and value from satisfaction, and satisfaction from conation, is, he admits, "not easy." I think we must say that it is not only not easy, but that ultimately it can not be done. This will be clear, I think, to anyone who understands the difficulty of expressing concrete values except in the time form.

I shall contend, then, that the essentials of value can not be expressed apart from time and duration and that we lose part of its meaning if we leave this aspect out. Duration as "necessary times," we have already seen, is necessary both for the making and the enhancement of values; but it is also true that duration in the sense of lastingness is a necessary essential of the values when thus made. Increasing purpose can not be thought apart from duration, but neither can the "im-

² B. BOSANQUET, "A Symposium on Purpose and Mechanism", *Proceedings of the Aristotelean Society*, 1911-1912.

perishable goal" which alone makes increasing purpose intelligible. Apart from time and duration in these two senses the entire life of the individual and of the historical process, which in this respect is the life of the individual writ large, both collapse and become meaningless.

That duration in both of these senses is part of the essentials of value can be shown by the analysis of two hypothetical cases often raised in connection with problems of ethics, and by considering the answers ordinarily given to the problems involved.

Suppose, first of all, it were possible to show that up to date the amount of virtuous and happy conduct in the world has shown a steady increase until it has reached the sum total now existing. Now suppose that you were transferred to another planet where the conditions were the exact opposite, where the inhabitants ages ago started with the amount of such conduct we now possess and gradually declined until at the present moment they are no happier or virtuous than was the human race at the first stage of its career. Now add together the totals for both your worlds — the ascending world which starts with the minimum and ends with the maximum, and the declining world which goes in the reversed direction. The grand totals in both cases are exactly the same. So far as the total result is concerned, the declining world has just as much to show for itself as the ascending. And yet we know that the value of these two worlds is not the same. The ascending is worth more than the descending. Why, asks L. P. Jacks, from whom I have taken this illustration, is this so?³ The answer contains, I believe, not only, as he says, the key to the meaning of moral progress, but also brings out clearly the essential role which duration plays in the nature of value.

With this we are prepared to consider the second sense in which duration is part of the essentials of value, another hypothetical question to which the answer also gives us a key.

³ In his article on *Moral Progress* he speaks only of "happiness." I have changed it to read "happy and virtuous conduct" to avoid prejudices as to the nature of the good.

Suppose, as postulated in the preceding case, a maximum of happy and virtuous conduct were achieved, would it make any difference to the intrinsic quality and value of this state of affairs if it were achieved only to pass away; does, in other words, duration in the sense of lastingness or endurance make any difference to value? Suppose, it were true that, as some scientists hold, vital and physical extinction were the predestined end of the universe, but before this happened the penultimate state were the millennium, would this fate affect its value or would it be completely irrelevant? There is a view of value according to which value is not dependent upon its conservation. That which we treasure as beautiful and good may retain its value whatever fate be its lot and whatever shadows may darken its fall... Should it be the fate of the good and the beautiful to perish, would it therefore be less good and beautiful? I should answer, in opposition to William James from whom the illustration is taken, "that it would not retain its value whatever fate be its lot, for it is part of the nature of value itself that it shall be conserved."⁴

Duration in both these senses is then part of the essentials of value. It is, however, upon the necessary character of duration in the second sense that the issues involved chiefly turn. It is denied explicitly that lastingness or conservation is essential; the once-for-all, *das Einmalige*, is sufficient in itself and "lastingness adds nothing to value."

Now that mere continuance in time does not make the quality of value is undoubted. The everlasting hills are not by reason of their mere persistence necessarily more valuable, although they may well be significant symbols of values. It is better to have lived than to have lasted, we are told, and we are perhaps greatly impressed. It seems to me, however, that such a *dictum* rests upon a false conception of lastingness, one which identifies it with mere physical persistence. An historical object is not an enduring entity in the sense of a physical object. It is fully irrelevant, both historically and axiologically,

⁴ Letter to Henry Adams, found in Vol. II of William James' *Letters*, p. 344.

whether an historical process persists or continues for a decade, a century or a millennium, if, as the above concept of duration implies, no moment within the process were qualitatively different from another. What makes the duration of a political or economic institution, of a war or a peace, significant or important historically, is not the mere lastingness, the abstract dimension of duration we call endurance, but rather the fact that the qualitative character of the event or movement in question *would not be what it is* had not the period of its endurance lasted the time it did — that is, for the qualitative character and the values involved to manifest themselves.

As a matter of fact, the supposed alternative between living and lasting is not a disjunction at all. Actually, to live significantly one's life must also last at least long enough to acquire meaning. Significant biography presupposes it. When we write of the life and times of an individual, the life, to be important enough to be written about, must endure through a time which is significant for history. Life as mere existence, as mere persistence in being, is itself without significance, whether it be the centuries of some prehistoric monster or the moments of some ephemeral insect. Since within their life processes, so far at least as we know, no time is qualitatively different from another, it makes no difference whether the duration is long or short. In the case of the human, whether viewed biographically or historically, the situation is wholly different. Here it is precisely the qualitatively different contents which determine the significance of the duration.

But to return to the main point of the argument, duration does not in itself make the quality of value, but in order to be value, it must endure or be conserved. In this connection Aristotle is often quoted — "endless duration makes good no better, nor white any whiter." We may agree that duration makes good no better in the sense that the good transcends time, but this is not the issue. It is rather whether once the good is realized in time, if it does not endure it has been really good at all. The misunderstanding here involved is, however, still more fundamental, and is bound up with the entire Platonic-Aristotelian conception of essences — at least as ordinarily

understood. Lastingness, it is true, makes white no whiter, but the Good is not an essence of the same nature as whiteness. The latter is "inert," to use Berkeley's phrase, while the good is not. On the contrary, its very essence is not merely to be, but includes, as an essential part of its nature, an ought-to-be (which, when acknowledged, expresses itself in the moral ought), and implies not only the maximization of the good, but also, by the very fact that it ought to be, its lastingness or conservation. The Platonic conception of the Good is not, I think, that of an inert essence above described — for Plato himself ascribes to it power — but even if it were, it would be none the less false.

It would seem then that neither of these extreme views of the nature of value is tenable, and that, further, there is no necessary contradiction in the idea that value is both in and out of time. Neither is tenable for the reason that each ignores something essential to the nature of value. If value is merely a temporal phenomenon, a particular historical fact, then the meaning of history collapses, for there are no measures or models in terms of which that meaning could be determined and understood. On the other hand, if value is wholly outside of time, again the meaning of history collapses, for apart from time and duration the entire life, not only of individuals but of peoples, which in this respect is the life of the individual writ large, becomes meaningless. Nor are these two aspects of value in contradiction. The fact that value is in time, and thus historically conditioned, means merely that value does not exist or is not actualized until it is apprehended and acknowledged by beings themselves in time. This does not mean, however, that the values thus apprehended and acknowledged, are made by man; it is rather that, as we have seen, man is made by them. Man both makes and is made by history, and without this double aspect of values this fundamentally circular character of history can not be understood.

C

The bearing of these considerations on the historical antinomy with which we are concerned is sufficiently evident.

The postulate of progress, including both the enhancement and conservation of values, is for many the transforming concept that gives to history its meaning and its scope. The usual assumption, as for example that of Fichte and Rickert, is that the recurrence or circular theory negates these essentials of value and therefore makes history meaningless. This is the significance of the horror of men before the doctrine of recurrence — the significance also of Zarathustra's " stillest hour " which Nietzsche describes with his inimitable power.

There can be no question that recurrence, in the non-historical sense of which we have spoken, creates a sense of futility and even of horror. A symbol of this feeling is the Greek parable of the labors of Sisyphus, the drawing of water in a sieve, the rolling of the rock up the slope only to have it roll back again. But as Renouvier asks, "do we offer any real consolation to Sisyphus by promising him an annihilation which is coupled with the promise of successors capable of lifting his old rock higher and still higher up the fatal slope, by offering him the eternal falling of this rock and successors who will be eternally annihilated and endlessly replaced by others?" It is understandable, then, that any doctrine of recurrence should be felt to be wholly incompatible with the "essentials of value," yet understandable as the feeling is, it is, I think, not wholly justified. Indeed, I should be disposed to go even further and to suggest that such recurrence may actually be the condition, not only of a meaningful individual life, but of the historical life also. I should not want to subscribe wholly to Nietzsche's apparent perversion of Kant's categorical imperative, when he bids us so to act as to be willing to have that act eternally recur. And yet there is more to it than meets the eye. For is he not thereby indicating an aspect of the spiritual life which we all actually acknowledge? For is there not that in man which is everlasting, and if so must there not be something which in one form or another must eternally recur? Doubtless Nietzsche thought by this application to take the sting out of this ancient doctrine, but perhaps the sting is there only if recurrence in the spiritual life of the individual and of history

is confused with that meaningless repetition which is found in nature.

IV

THE HISTORICAL ANTINOMY IN THE METAPHYSICAL CONTEXT. HISTORY AND ONTOLOGY.

A

The antinomy in the historical context reflects, it is apparent, a still more fundamental problem, namely the metaphysical. The preceding discussion of time in its relations to the essentials of value has itself opened up metaphysical perspectives, for as J. A. Gunn rightly tells us, "all discussions of time lead sooner or later to fundamental problems of a metaphysical kind. To ask what is the nature of time is, in effect, to ask what is Reality."⁵ To discuss the nature of historical time leads then sooner or later to metaphysical problems of history.

Metaphysics, as previously defined, is concerned with the whole of reality and wherever we have pronouncements on the whole we have metaphysics. For our present purpose, and after the discussions of the preceding section, we may, I think, with advantage redefine it in the following way. Metaphysics is, indeed, concerned with the whole of reality, but in this total world there are two aspects which can not be separated, namely both existents and values, and it is the task of metaphysics to interpret them as a unity. That this is the essential character of the metaphysical problem, the entire story of philosophy, at least in the Western world, makes clear.

It is at this point, I think, that the ultimate significance of the two speculative theories of history finally appears. On the assumption that time is part of the essentials of value, a doctrine of development and progress seems inevitable. If

⁵ J. A. GUNN, *The Problem of Time*, Chapter VII, especially p. 371.

there is a timeless scale of perfections, in so far as it is expressed and realized in time it must manifest itself in a "perpetual progress towards perfection." On the other hand, on the assumption of the timeless character of ideas and values, some doctrine of recurrence seems inevitable. Time being the moving image of eternity, it would seem that the eternal ideas and values, in so far as they appear in time, can merely recur, and progress be an appearance or illusion.

There have, I think, always been these two motives or strands in European thinking, and a continuous effort, conscious or unconscious, to combine them in a larger unity is the key to much of European philosophy. This attempt to combine them is, moreover, the source of the continuing structure which men have called *philosophia perennis*.

The main tradition in European philosophy is a combination of Christian and Greek ideas. Christianity is the historical religion *par excellence* and for that reason is committed to belief in the absolute validity of an historical phenomenon, the Incarnation. On the other hand, this historical phenomenon has a supra-historical ground — the eternal Word or Logos — and Christian thought is therefore equally committed to the timeless character of ultimate reality — a commitment which was strengthened and validated by the ideas of Greek philosophy. European philosophy, in so far as it embodied these two elements, often found them apparently at war with one another, and has from the beginning been confronted with the formidable task of trying to reconcile them. Even within Christian theology itself, at least in its philosophical aspect, this division has been fateful, and we are not surprised when those who lean towards the Platonic element in the tradition say, with Dean Inge, that progress is a superstition and that the circular theory of history is the only view possible. In the field of philosophy itself there has also been this division, but in the main the effort to combine them has been the dominant character, and the task of reconciliation is the key to a large part of its metaphysical thinking.⁶

⁶ This has been true until quite recent times when, in certain quarters,

B

An outstanding attempt to combine these two motives is that of Leibniz. I choose him partly because of all modern philosophers he, perhaps, best continues the spirit of traditional philosophy on this point, but chiefly because he attempts to meet the specific issues we have been considering — to combine the timeless principle of perfection with the temporal, and the notion of recurrence with the conception of a "perpetual and very free progress of the universe in time."

In the closing paragraphs of his essay *On the Ultimate Origination of Things*, he writes, "Further to realize in its completeness the universal beauty and perfection of the works of God, we must recognize a certain perpetual and very free progress of the whole universe, such that it is always going forward to perpetual improvement."⁷ In other words, when value (completeness and perfection) are translated into terms of realization in time (and otherwise they are only inert essences or possibles) the postulate of perpetual development or progress necessarily follows.

First of all, Leibniz sees clearly that which any serious reflection on the concept of progress must make evident, namely that, while particular progressions or strands of progress are perhaps empirically discoverable and verifiable in the processes of history themselves, progress of the whole, whether of human history or ultimately of creation itself, is not thus empirically demonstrable. It is, perhaps, demonstrable for the past of history but not for the present and future. Belief in progress, in this larger sense, can follow only, as it did for Leibniz, from belief in the completeness and perfection of the works of

the attempt has been made to extrude the Greek element from Christian theology and philosophy and with it the entire idealistic or rationalistic element in the philosophy of history. This dualistic philosophy of history, as it has been called, is represented by such figures as Kierkegaard, Karl Barth and Emil Brunner. It involves an almost exclusive emphasis upon the Hebraic element in Christianity, the Jews alone having had, it is said, a sense for history.

⁷ R. LATTI, *Leibniz: The Monadology, etc.*, p. 350.

God. The second point is no less significant. Not only is such progress perpetual, but it must also be conceived as very free. For, granted the perfection of God which includes absolute freedom and self-determination, the progress which is the corollary of that perfection must indeed be very free. In more metaphysical language, granted Leibniz's concept of plenitude or fullness of being, the inexhaustible possibilities of existence demand that the progress shall be both perpetual and free. For Leibniz, as for his successors, Kant and Hegel, progress is implied in the notion of Providence itself — the very free character of progress reflecting the fullness of being which characterizes the Divine.

To many moderns all this doubtless seems a naive if edifying speculation, and to involve ways of thinking sufficiently remote from those of the present — all this talk of the completeness and perfection of the works of God leaving them very cold. Yet the remoteness of Leibniz's idiom from the sophisticated language philosophers now talk should not blind us to the fundamental metaphysical thinking of which this idiom is the dramatic expression. The important point here, however, is this way of thinking as an illustration of the attempt to combine the two motives of traditional European philosophy.

That Leibniz is not wholly unaware of the difficulties, both empirical and logical, in this attempt, goes without saying. He acknowledges the obvious facts of degeneration and regress. He also recognizes the fundamental speculative difficulty, namely that if such progress were actual, "the world should long since have been a kind of Paradise." With regard to the former he answers that "although it is true that certain parts (of nature) grow wild again or again suffer destruction and degeneration, yet this is to be explained," he believes, "by the principle that this very destruction and degeneration leads to some greater end, so that somehow we profit by the loss itself."

As concerns the more fundamental difficulty, namely "the possible objection that if this were so the world would long since have become a paradise, there is," he holds, "a ready

answer." "Although many substances have already attained a great perfection, yet on account of the infinite divisibility of the continuous there always remain in the abyss of things slumbering parts which have yet to be awakened, to grow in size and worth and, in a word, to advance to a more perfect state (*ad meliorem cultum*). And hence no end of progress is ever reached." Elsewhere in a letter to Bourget he writes, "You are right in saying that our globe ought to have been a kind of paradise, and I add that, if that is so it can quite well become one yet, and it may have drawn back in order to make a better leap forward."⁸

Leibniz's answer to the minor difficulty, the facts of degeneration and decay, is doubtless too easy for our modern taste, but what it amounts to is, in principle, not significantly different from that of historians and philosophers since him. The presence of regressive movements is in itself no argument against progress if it is not thought of as in a straight line. It is rather with the major difficulty, the speculative difficulty of which we spoke, that we are chiefly concerned, for it involves precisely the problem of recurrence with which we are here concerned.

The critic argues that if such progress as he asserts were actual, the world would long since have been a paradise. But he might also have said, not only ought our globe to have been a kind of paradise, but on Leibniz's assumptions, it should have been a paradise, not only once but many times. For if, as he admits in his reply to Bourget, the latter is right in saying that on his assumptions the paradise should have long since been achieved, would he not then also have been right in saying that in the infinity of time that achievement should have been repeated over and over again? Indeed this is rather implied in Leibniz's remark that if it has happened once it may quite well happen again. To all this Leibniz has what he calls "a ready answer." He admits that on his premises perfection has been attained innumerable times. This, however, is perfectly compatible with the doctrine of progress, for there always

⁸ *Principles of Nature and Grace*, (Latta) p. 419, Note.

remains in the abyss of the infinite, possibilities of new perfections to be realized and hence no end to progress is attained.

This then is Leibniz's solution of the historical antinomy in the metaphysical context. It may be doubted whether it is quite as ready as he supposes — there are difficulties of which he is apparently not wholly aware — but in so far as the main issue is concerned, he would seem to be in principle right. As there is no necessary contradiction between progress and recurrence in the historical context, so also, it would seem, there is none in the metaphysical context.⁹ There would seem also to be no necessary contradiction between development and perfection; indeed it is rather, as Leibniz thought, from the very perfection and completeness of the works of God that the notion of a perpetual and free progress in time necessarily follows. Be that as it may, Leibniz's solution has in general not commended itself to the modern mind, for which development and perfection are in irreconcilable contradiction and have been so from the beginning.

Lovejoy, who has perhaps presented these two elements in Leibniz's philosophy as well as any one, draws this conclusion. He speaks of Leibniz's two visions, that of the rational and the perfect, inherited from the tradition, and a second vision which was arising out of the conditions of modern life and knowledge. He finds the source of the second vision — that of perpetual and very free progress — in certain historical happenings, especially in science and more particularly in biology — happenings which were gradually "temporalizing the great chain of being" and converting the immutable system

⁹ It may be supposed that Leibniz's solution is bound up with his own special metaphysics — with his doctrine of the infinite divisibility of the continuous — and his doctrine of the monads — a theory which translates the doctrine of plenitude or fullness of being into these terms — but I do not think that this is so. It is true that it is because there always remain in the abyss of infinite possibilities, new perfections to be realized and hence no end to progress, but the same results follow, I think, no matter how plenitude is interpreted. Leibniz has, so to speak, in this respect merely added a footnote to what was an essential part of the ontological tradition of Europe.

of perfection, the eternal order, into endless becoming.¹⁰ It is doubtless true that this second vision owed much to the historical, genetic and evolutionary conceptions arising in the new science, but it is also true that the two visions were in a sense present in European philosophy from the beginning, as indeed Lovejoy himself asserts. The real question is whether these two elements have always been in contradiction and whether Leibniz's attempt to reconcile them simply makes clearer the irreconcilable contradictions present from the beginning. To this problem we must now turn.

V

HISTORY AND THE ONTOLOGICAL TRADITION
OF EUROPETHE PLACE OF HISTORY IN THE SYSTEM OF
PHILOSOPHY

A

With this we are brought to the second metaphysical issue which history as a realm of existence raises, namely the place of history as a whole in the larger whole of reality. Human history is, after all, from one point of view, a part of cosmic history, and no philosophy of human history is possible which divorces it completely from this larger context. This fact, in itself, sets the metaphysical problem. The attempt to solve it by subsuming the historical development of humanity under the rubric of the evolution of nature, although attended by insuperable difficulties, is one that had to be made, but the very difficulties encountered indicated that the problem, if it is to be solved at all, must be transferred to the metaphysical level and seen in the light of a system of philosophy as a whole. This is the task of the present section.

Before entering upon this task it is desirable to consider a certain *a priori* argument against the entire enterprise. It is

¹⁰ *The Great Chain of Being*, p. 261.

argued that, granted there is such a thing as history in the universal sense, it is of such a character that it could find no place in any metaphysical system for history and system are themselves two wholly incompatible ideas. A metaphysics of history implies an integration of man and his history in an order or system of being, but history which is essentially temporal and a-logical can never be apprehended or expressed in such a rational form. The object of metaphysics is an intelligible whole — and to be thus intelligible it must be a contradictionless whole or system — but with such a system history is in principle irreconcilable.

It is argued, in the first place, that the notion of philosophical system is itself contradictory and can not avoid a fallacy involved in the concept of an all-embracing system. Such a system could not be changed for it would already contain all that there is. If it can be enlarged it can not be all embracing, cannot be what it claims to be. Nor can its claim to truth be absolute so long as it is impossible to subject it to reinterpretation. "Nature," in the words of Goethe, "has no system; she is life and movement — from an unknown center to a non-cognizable end." If this is true of nature it is *a fortiori* true of human nature and of human history, we are told, which is concerned with the novel, the once-for-all and the unrepeatable. The principle of the heterogeneity of ends and system are in principle incompatible.

To this *a priori* argument one could, of course, reply, also *a priori*, that if this were true there could be no knowledge. If there were nothing but absolute becoming, with the absolute novelty it implies, the most fundamental conditions of all knowing would be lacking — as indeed Croce himself saw — and even if there were an intuition of this becoming it certainly could not be communicated. Life merely as it occurs is, as Bernard Shaw tells us, senseless, and this is preeminently true of that aspect of life we call human history. If we are to find any sense in it, some integration of man and his history in a larger whole is inevitable. All this is true, and as I believe, as unanswerable as true, but I prefer in this connection rather to

point out that the entire argument presupposes a false conception of philosophical system. No conception of system with which I am familiar — not even the much berated Hegelian — has ever supposed that a system of realities could be complete in the sense that it includes every particular thing or event that was, is now, and is to come. To admit novelties in the universe, one does not need to suppose such a thing as complete novelty of kind. Indeed, absolute change in the sense that changes in the content of knowledge always react on its fundamental principles and structure, so that "no philosophy can flatter itself that it will not be altered out of all recognition as knowledge grows," would, in the end, make all knowledge impossible. Our modern aversion to system, to the placing of either nature or history in any *a priori* frame-work of things, is understandable, but this does not affect the fact that without system, in some sense, knowledge itself is impossible.¹¹

B

With these more general considerations in mind we may now turn to the specific question of the place of history in the ontological tradition or metaphysical system of European philosophy.

It may be questioned, of course, whether there is any such "ontological tradition," any *philosophia perennis* with which both human history and cosmic evolution, from which history cannot be ultimately completely separated, must be related. I think, however, that any one who understands the origins of European philosophy, and the problems of the temporal and the eternal with which it was faced, will recognize this continuous tradition. In any case it is so recognized by the two modern philosophers, who represent most completely modern temporalism, with its absolutizing of the temporal, namely Bergson and Heidegger, from the latter of whom indeed, the term "ontological tradition" is taken, and this is all that is necessary for the present argument.

¹¹ For a fuller discussion of this point see my book, *The Intelligible World*, Chapter XIII, entitled "Headlining the Universe."

Bergson calls this traditional ontology the "natural metaphysic of the human mind," although he is far from being the first to use the term — for, as he explained, it is the form of thought to which men naturally and necessarily come if they follow the intellect to its natural conclusion. With extraordinary insight he also puts his finger on the key notion of the system. He points out that, whether in its ancient or more modern forms, it postulates a kind of metaphysical necessity in virtue of which the confronting of the All (or perfect being) with the zero (or non-being) is equivalent to the affirmation of all the degrees of reality between them. This constituted the *scala naturæ*, the chain of being, a system of thought which dominated European life and culture for a thousand years. It is, moreover, by virtue of this postulate, as Bergson further points out, that the beginning and end of things, ultimate origination and ultimate destiny, to use Leibniz's terms, are brought together. The identification of efficient and final causation, the last word of Greek philosophy, together with the concept of Being implied, became also the essential character of all European philosophy. We perceive God, or Idea, or Spirit, as efficient or final cause, according to the point of view, and thus it is, as he finally says, that "an irresistible attraction continually brings the intellect back to its natural movement and brings the metaphysics of the moderns continually to the conclusions of the Greeks."¹²

This same natural metaphysics Heidegger describes as "the ontological tradition of Europe" and in this tradition he includes, rightly I believe, not only Greek philosophy in both its Platonic and Aristotelian forms, Christian philosophy from St. Augustine through the Scholastics, both Platonic and Aristotelian, but also all of modern philosophy from Descartes through Leibniz and even through Kant and the post-Kantians. So far as fundamental conceptions are concerned, this traditional ontology, with its implied conception of system, is, so far as European culture is concerned, the perennial philosophy.

¹² H. BERGSON, *Creative Evolution*, English translation, p. 329.

It is then upon this traditional ontology that Bergson would have us "turn our backs," and for the "historical destruction" of which Heidegger calls, as the necessary preliminary of the existential philosophy which he proposes.¹³ Of the two, the latter, the position of existentialism, is especially significant, for it is the form in which not only the complete historicism, but also the nihilism into which it ultimately eventuates, is most sensationally expressed for us to-day. For both, however, it is the fundamental contradiction between history and system, between development and perfection or completeness, which, while appearing specifically in the philosophy of Leibniz, is held to be inherent in the entire ontological tradition of Europe. This supposed contradiction rests, however, I believe, not only on a false conception of philosophical system, but still more on a false conception of the nature of history itself, and it is this latter that we shall now attempt to expose. First, however, let us seek to state more specifically the nature of history and its place in the system of realities, as conceived by traditional ontology.

C

Whether rightly or wrongly, the European ontological tradition found no difficulty in giving history a place in its system of realities. For it, as Berdyaev says, "history is a specific reality existing in a hierarchy of realities which compose Being." While temporal and phenomenal in appearance, history is, as he also says, "deeply ontological," a revelation of ultimate reality.¹⁴

This conception of the ontological nature of history was characteristic of the entire European tradition, both Greek and Christian. Both found the essential character of the historical in its relation to a supra-historical principle, but whereas for Greek thought this principle was in the main ineffable, Christian thought found history revelatory of ultimate reality.

¹³ *Sein und Zeit*, 1929, pp. 19 ff. The specific expression is "the destruction of the history of ontology..."

¹⁴ NICOLAS BERDYAEV, *The Meaning of History*. London, 1936, p. 12.

The place of human history in the hierarchy of realities was variously described as a "middle link" in the scale of being or as a "middle rung" in the ladder leading from non-being to the all-perfect being. Viewed from the standpoint of time it is therefore an "interlude," an interlude which gets its meaning from its relation to the infra-historical from which it comes and the supra-historical which constitutes its consummation. It will be well to dwell for a moment on these metaphors and the images which they call up.

The spatial images of the link in the chain or the rung in the ladder emphasize the relation of the historical to the non-historical realities. We can not, perhaps, know empirically how far below us the historical extends in the order of terrestrial existence or how far above us in the order of the celestial, but we do know that history is a middle term and presupposes both the infra- and the supra-historical.

The image of human history as an interlude expresses the same notion in temporal form, and is, accordingly, more significant for the philosophy of history. The idea is indeed inevitable in any such philosophy, the question being merely whether the interlude is meaningful or meaningless. For naturalistic and materialistic philosophies the interval is ultimately meaningless, sound and fury signifying nothing. For as that which fills the interlude comes from nothing, so also it passes into nothing, and is as though it had never been. For the ontological tradition of Europe, on the other hand, it is meaningful, for as it has its origin so also it has its consummation in the Divine.

This conception of history and of its meaning has, until recently, been the abiding presupposition and the determining element in European culture. Together with the idea of Divine Providence, with which it is bound up, it has dominated men's interpretation of the story of humanity. It is the idea underlying Dante's *Divine Comedy*, in which it found consummate dramatic expression. It speaks of the end of the world, of this meaningful interlude, when the souls of men will pass into an eternity of bliss or damnation. It is also the idea of history and time presupposed by St. Thomas' *Summa Theologica*, in which it finds more metaphysical expression. It is important,

I think, to distinguish between the dramatic and the more metaphysical expression of the idea. The end of the world does not necessarily mean end in the literal sense of an ending in a moment of time. For as the notion of creation or ultimate origination is, as Leibniz pointed out, independent of the notion of temporal origin, so is the notion of consummation of the end independent of the notion of ending in time. In like manner, the idea of the passing of souls into eternity is also a dramatic way of expressing the metaphysical truth about the relation of time and history to the Eternal and non-historical, for the life in time, both individual and historical, is the very stuff by means of which is expressed the life eternal.

It is with the more metaphysical expression that we are here concerned and with its relation to the ontological tradition of Europe. In this metaphysical form, God is the supra-historical ground of the historical process, the first cause or prime mover of history, as well as of nature, but He is the consummation as well as the beginning, the Omega as well as Alpha. As such, God is the all-embracing and over-ruling Providence, both transcendent and immanent. As both beginning and end, God alone determines the ultimate end, but men are in part responsible for the proximate causes and ends in history. God has given man both reason and freedom, including freedom to choose between good and evil, and these are conditioning factors in the making of history. This theological version of the providential theory has, however, its philosophical or metaphysical version also. As Perfect Being, God is perfect reason also and the conception of reason working in history, with its inevitable theodicy, is implicit in the entire European tradition. Since God, as Perfect Being, is both the efficient and final cause of history as well as of nature, the problem of development and perfection is implicit in the entire metaphysics. Thus Christian philosophy, while giving a meaning to human history not conceivable to the Greek mind was, nevertheless, in its fundamental conceptions at least, as Bergson says, by an irresistible attraction brought back to the metaphysics of the Greeks.

D

This then constitutes in broad outlines the place of history in the ontological tradition of Europe. This metaphysics of history, however, so we are told, contains insoluble contradictions which, while always present, have, with the development of the modern sense for time and the historical, finally become fully apparent. The "two visions" of Leibniz, that of the rational and perfect inherited from the tradition, and that of the historical character of all existence, arising out of modern science, are in principle irreconcilable. It is, however, my contention — and this is the main theme of this section — that these supposed contradictions do not actually exist, but have arisen rather out of certain false notions, not only of the nature of philosophical system, as we have seen, but still more of the nature of history itself. It is with this latter point that we are now concerned.

A true conception of history, as opposed to the false picture of complete historicism, recognizes, I contend, that in its very character of the historical, it contains within itself that which is not historical and to which the categories of history do not apply. This very fact, however, implies that history is "deeply ontological" — having a necessary relation to the infra- and supra-historical and therefore a specific place in the hierarchy of realities that compose being. That this is true of human history we have already seen. Without the supra-historical element in the historical products of man — his art, his religion and his knowledge — an element that is timeless, history can not be understood. It can be shown, I think, that this is also true of all existence in its historical character. Here too the presence of "eternal objects" seems to be as much a condition of its really historical character as are time and becoming. Even a philosophy of evolution (of natural history), so Whitehead tells us, requires an underlying activity — a *substantial activity* expressing itself in individual embodiments and evolving in achievement of organisms. The organism is a unity of emergent value, "a real fusion of the characters of *eternal objects*, emerging for their

own sake." (*italics mine*). Be this as it may, of human history there can be no question and it is with this that we are concerned. The eternal objects in history, those which, as it is said, "can not be surpassed" are of the very essentials of history.

If, then, this be the true conception of history, it becomes clear that it is out of a false conception of history, and of the historical character of existence itself, that the supposed "patently irreconcilable contradictions" between history and the ontological tradition arise. They are contradictions between development and perfection, between being and becoming, and finally, between the temporal and the eternal. Let us examine them in this order.

The primary contradiction, at least so far as history is concerned, is that of the "two visions" — of perfection or completeness and development or progress. Development is indeed a category or idea which alone enables history to really define its scope, but development negates perfection and perfection development. Development does, indeed, negate perfection in the sense that that which is developing is not yet perfection, but such negation is, as we shall see, not contradiction. Actually, development implies perfection and perfection, in so far as it is related to time, is manifested in development. Thus philosophers speak of a "developing perfection," a notion which, as we have seen, Leibniz in his fashion sought to make intelligible. Perfection belongs only to God, the absolutely good; it manifests itself in finite creatures only in perfectibility. But this developing perfection leaves, as has been beautifully said, "particles of perfection" in the historical process which themselves can not be surpassed. Development implies perfection; without it there would be no development but merely becoming. Actually, then, this supposed irreconcilable contradiction presupposes a more ultimate one, namely between being and becoming.

The supposed contradiction between being and becoming likewise rests on a false conception of becoming. It is assumed that there is becoming without anything to become. In actual experience, however, becoming always presupposes something which becomes. Even on the lowest levels of existence reality

is always an individualized something and the becoming of such individuals is never sheer becoming in the sense of absolute change. Thus becoming is never the contradictory of being — it is, as the ontological tradition expresses it, "depotentialized being." Far from being in the relation of contradiction, as in the case of development and perfection, so here the one requires the other for its meaning.

The same holds true of the still more ultimate form of the supposed contradiction, namely that between the temporal and the eternal. Here too, in actual experience, the relation of the two is quite a different one. Here too, in the temporal itself the timeless is potentially present. Of time in this sense, the actual time of duration, not mere dimension, von Hügel has truly said that "it is for us men not a barrier against eternal life, but the very stuff and means by which we vitally experience and apprehend that life." Time in this sense is also imperfectly realized timeless objects, or as the tradition maintains, "depotentialized eternity."

For the ontological tradition, then, none of these contrasting aspects of experience is, or should be, viewed as logical contradiction. It is true, of course, that in a sense development negates perfection, becoming being and the temporal the eternal. But not all negation involves contradiction (privation is not contradiction) and this is one of the fundamental insights of the entire tradition. Logical contradiction arises solely within limited universes of discourse or logical systems — from the assertion of two propositions so related that the assertion of one involves the denial or exclusion of the other. In none of these cases is negation of this kind, for the assertion of the one, far from excluding the other, rather presupposes it for its understanding.¹⁵ If, then, these contrasting notions do not

¹⁵ Underlying this entire criticism of the ontological tradition is a conception of logical contradiction which is, I believe, fatal to philosophical understanding. It is quite commonly supposed that two concepts or propositions, abstracted from all experience and from the discourse in which experience is explicated, contradict one another and that by examining them simply as concepts and propositions, thus abstracted, one can determine whether they do or do not. This current doctrine I believe to be wholly

exclude one another, but are rather complementary, how is this relation to be expressed?

From the standpoint of thought they are correlative concepts. As in Descartes' illustration the outside of the curve can not be thought without the inside, or the valley without the mountain, so no one of these contrasting concepts can be thought without its correlative. Development implies perfection, becoming being, and the temporal the eternal. Viewed ontologically, the relation is described in terms of potentiality. Development negates perfection, becoming being, the temporal the eternal, but the negation here is privation — not exclusion. In order to realize lack or privation, one must know in some sense that which is lacking, and thus to know it, it must be potentially present in present experience.

Potentiality is a many-sided category. Without it we can not interpret the past nor anticipate the future. Without it all conceptions of evolution and development ultimately fall apart, for a merely emergent evolution in which there is nothing immanent in the process to emerge is ultimately a senseless conception. Unless underlying the process there is a substantial activity expressing "eternal ideas" in individual embodiments the entire conception is meaningless. But potentiality is much more than this — and it is this *more* that is significant in the present context. Back of the entire ontological tradition of Europe is a certain axiom or postulate — and it is this that not only gives it its driving force, but which also distinguishes it from typically modernistic forms of thought — namely, that you can not get the more from the less. *Ex minime maximum non fit*, but back of it lies the simpler and more

false and to rest upon a serious misunderstanding. No two propositions can contradict one another unless they are in the same limited universe of discourse, the same logical system. Just as propositions themselves have meaning only in the context or universe of discourse that determines that meaning, so contradictions between such propositions are meaningful only in that limited universe or system. Propositions are after all propositions and can not be separated from discourse, and discourse presupposes communication and communicating subjects. For an extended criticism of the conception of "propositions as entities," see my *Language and Reality*, especially Chapter VII, "Language and Logic."

ultimate formula — *Ex nihilo nihil fit*. If from the less the greater seems to arise, this is mere appearance, for the greater was already potentially present in the less. The antithesis of the All and the naught — plentitude and perfection and nothing, or absence of being, is, as we have seen, equivalent to the affirmation of all the degrees of reality between them; but it is also equivalent to the affirmation of the principle of potentiality, for only through this conception can the "hierarchy of realities which compose being" be brought into a systematic relation. Potentiality is the cement of system.

All this becomes of special significance in connection with the last of the supposed irreconcilable contradictions, that between the temporal and the eternal. If, as Berdyaev maintains, it is the nature of time that sets "the tragic problem of history . . .," the solution of that problem is possible only in terms of a valid conception of the relation of the temporal to the eternal. Without this notion — that the eternal is potentially present in the temporal — that duration, not mere dimension, is the very stuff by means of which we vitally experience the eternal, both the temporal and the timeless lose their meaning.

On this question of the relation of the temporal to the eternal, the ontological tradition has never been in doubt — reality is both in and out of time. For Greek thought this was central and it continued to be the essential of the Christian tradition. While St. Augustine admitted that he could not tell what time is, he was sure on this point. While for us time must be divided into past, present and future, these three affections of the soul, yet God possesses the splendor of ever-tarrying Eternity, in which "nothing passes, but the content of everything abides simply present. And in the next life, perhaps, all our thoughts will not be flowing, going from one thing to another, but we shall see all that we know simultaneously in one intuition." St. Thomas is even more positive. All things will in Heaven be seen simultaneously and not successively.

For the Christian, no less than for the Greek tradition, reality is thus outside time. But for this reason it is none the

less also in time. The Incarnation is an historical phenomenon in time but it is also in a sense before all worlds and before all time. The doctrine of the transcendence and immanence of the Divine involves the notion of the Eternal as also present in the temporal.

Leibniz and Hegel, both of whom, as Heidegger rightly maintains, continue this ontological tradition, also maintain this conception. In the *Encyclopaedia*, Hegel tells us that "das alle Reelle ist wohl von der Zeit verschieden, aber ebenso wesentlich identisch mit ihr." For him, as for the entire tradition, both aspects are equally necessary and equally important. The argument here, if indeed argument is necessary, is in principle the same as in the case of value (value being also in and out of time), for value and existence are equally necessary aspects of reality. As in the case of value, neither exclusive view is possible, for each ignores an equally necessary aspect, so also in the case of reality neither of the two exclusive conceptions is possible. If reality were merely temporal, if to be is really merely to become, then the meaning of history collapses, for history demands that which transcends becoming for its understanding. On the other hand, if reality were wholly outside time, again history collapses, for without time and duration the life of peoples and individuals alike becomes unreal and illusory.

With this we are brought back to the fundamental, as it is the final problem of this entire discussion for, as we have already seen, all discussions of time lead sooner or later to fundamental problems of a metaphysical kind. To ask after the nature of time is in effect to ask after the nature of reality. This is pre-eminently true of the time of history, for to many it seems that time and history are identical. History, however, like the reality of which it is a part, is also both in and out of time. For the understanding of historical events, periods and movements, localization in time is necessary; but for the understanding of the meaning of history as a whole, we must go outside time. Historical time is itself the function of the relation of the historical contents — events, periods, and move-

ments — and therefore the whole of history is, as Simmel says, *Zeit-frei*.

This is a hard saying, but not so much of a paradox as appears at first sight. Men speak of history as *in* time, but only when they think of history as *minus* time. The events, movements and periods of which we have spoken are indeed localized in time, but this very historical time in which they are localized is a function of the relation of the contents. In this sense time is really in history, not history in time. More than this, history and historical time fall within a whole called the universe. Men speak also of the universe as in time, but they can do this also only when they think of the universe minus time — in a limited sense which is not the universe in the sense of the *omnitudo realitatis*. Actually time is in the universe, not the universe in time. History and historical time themselves fall within this whole — whether thought of as self-determining or as determined by some supra-historical principle — a whole which, while it manifests itself in time and history, is itself non-historical. The meaning of history, like that of all things in space and time, lies outside space and time, and if it is to be found must be sought there, as all representatives of the ontological tradition of Europe have always understood.

E

To this fundamental insight we must, I think, hold fast. Heidegger is quite right in including in this tradition all the great philosophical names until the most recent times, and Bergson is right also in thinking that it is the way of thought to which men naturally come if they follow reason to its natural conclusion.

It is the fundamental insight also of poet and prophet, of saint and mystic, although for them it is expressed in a different idiom. In order that metaphysical truth may have power over the minds and hearts of men it must be expressed in dramatic language. Even the philosopher, as was recognized by Plato and all large-minded philosophers since him, must in the end speak in parables also. The task of the philosopher,

even if he is a metaphysical genius, is, with respect to the whole of human life and culture, after all, a modest one — namely to make the original realities of the spiritual life intelligible to reason. His conceptual analysis and constructs can not hope for a moment to communicate the same kind of meaning — the living truth — made possible by imagery and symbol. Ideas such as God, providence, immortality, are, indeed, in essence the same for the poet and prophet as for the philosopher but they are expressed in a different idiom.

All this applies with special force to the expression of the meaning of human history. Here, above all, it is the religious geniuses of our culture who have seen most deeply into the nature of things, whose vision, while often clothed in the language of myth, is nevertheless profound. For it is only they who know how to combine the concrete with the universal, the richness of our present life with a sense of the eternal. For them, election and grace are the secrets of history, and in this, as Troeltsch has said, "*sie haben schon recht*." It is, accordingly, the providential theory of history which, while it has taken on various, and often impossible forms, nevertheless has been continuous in European history from the Greeks to the present day.

VI

A NOTE ON BERDYAEV AND TRADITIONAL ONTOLOGY

In opposition to this insight of the ontological tradition of Europe, Berdyaev develops a metaphysics of history which demands consideration. It is a complete historicism — one which not only affirms the historical character of existence, but even speaks of "historical movement in the depths of the absolute." This position is maintained in his conception of a "celestial history" as well as a terrestrial.¹⁶

He recognizes, indeed, that such concepts as his are in opposition to "current dogmatic Christian theology," and equally to the entire European tradition. The usual philo-

¹⁶ *Op. cit.*, Chapter II, entitled "Celestial History."

sophical objection to the possibility of such celestial history is, he tells us, a formalistic and rationalistic one, and reduces itself to the argument that such an assumption is irreconcilable with the Divine perfection, since all movement, destiny and history postulate an insufficiency and hence an imperfection. He does not believe that such an objection is valid. In fact, "the very opposite must be affirmed with as great success. It might be argued that the absence of creative movement, of creative historical destiny in the innermost depths of the Absolute, also denotes an insufficiency and imperfection . . . It is rather the proof of the perfection of being. All being devoid of creative movement would suffer loss, it would be denied creative destiny and history."

Now I am well aware, of course, that we are here at one of the most difficult points of both theology and metaphysics and I have no desire to dogmatize in the matter. I can only say that if Berdyaev fails to see the argument of the ontological tradition, I fail equally to see the force of his reply to it. For while history and development are reconcilable with perfection in the terrestrial sphere, it is difficult to see how they can be made so in the celestial, to say nothing of the "innermost depths of the Absolute."

The traditional theology, he maintains, "is vitiated by limited rationalistic thought. We can not approach this deeper mystery of the spiritual life by the criteria of abstract philosophy but only through concrete mythology." Quite properly, he tells us, this that he is writing is not philosophy but mythology. And quite naturally also he appeals to the Gnostics, in spite of their "deficiencies and confusions of thought." This is, of course, the crux of the matter. One does not need to deny the significance of mythical language and its symbolisms in the communication of the deeper meanings of the spiritual life — I should be the last to deny it — one can merely reply in Berdyaev's own words, that it is mythology and not philosophy. As in the case of Goethe's "Prologue in Heaven" the stage is set for the life of a single human being, Faust, so in the heavenly prologue of St. John's Gospel the stage is set, not only for the life of an individual more than human, but for the

life of historical humanity as a whole. But such celestial history is not metaphysics and can never become such without translation into another idiom. I can not escape the feeling that his conception of celestial history is an extension of the dramatic and mythical into a region where it does not belong. Perhaps I should not say so, but this seems to me to be an extension of complete historicism raised to the nth power. If historicism as a *Weltanschauung* is, as Rickert says, an *Ueding*, surely when applied to that which is "before all worlds," it is supremely so.

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KNOWLEDGE AND WISDOM¹

I

KNOWLEDGE

Knowledge is a communicable logical apprehension of reality (X), by existing subjects.

If we define the ontological value of X as "given-in-experience," we attain the concept of object-experience. If this experientially given is a sensuous, external image we have "physics." If we interpret such images in terms of psychical functions as their apparent expressions we have psychology. Both together comprise the whole of natural-historical object-experience. Its truth lies in the agreement of those who investigate. We call this scientific kind of knowledge *immanent*.

If we define the ontological value of X not as given, but as giving, i.e., the act of logically apprehending logical and other formal apprehensions, then we attain the concept of a formal knowledge, which is not experiential. We have to think in order to know what thinking is. The laws of thought are valid if we think. We can not find thinking outside of its own actualization. More: The logical principles, through which all that which is given is logically organized, are the same forms through which they themselves are apprehended as such organizing forms. Identity, for example, is that which logic thinks and it is also that by which it is thought. The "logos" distinguishes itself from itself and remains the same in its self-distinction. We call this kind of knowledge *introscent*.

If we define, thirdly, the ontological value of X as neither given, nor as formal, but as an absolute whole of reality, as Being which contains both what is given and what is enacted, we develop ontological knowledge or a theory of Being. The terms "soul," "world," "reality" are such ontological symbols

¹ Presidential address, Southwestern Philosophical Conference, 1947.

of the absolute whole. The faith that there is reality, although it is never given, is to be logically elucidated. Reality is as correlative to faith in it, as the color red is correlative to the act of perception. We call this kind of knowledge *transcendent*.

Philosophy, the love of wisdom, is not confined to any one of the three kinds of knowledge. Philosophy knows that all three kinds of knowledge participate in the common task of logically apprehending reality. The universe of philosophy is the totality of what is factually given, formally possible, and transcendentally necessary. All three ways of apprehending reality terminate on the one hand in man, on the other hand in that which is, in Being. Philosophy must think Being in human existence, and human existence in Being. We call this all-comprehensive wisdom *dialectical*.

Dialectical wisdom itself distinguishes within itself three different apprehensions of reality as its own content: Knowledge is a communicable logical apprehension of immanent, introscendent and transcendent reality by existing subjects. We now ask: What is the relation of dialectical knowledge to the apprehended immanent, introscendent and transcendent content?

The given and immanent, as well as the giving and the transcendent reality is in each case a non-logical content to be grasped and constructed in logical forms. Wisdom is in all three levels of knowledge a dialectical unity of the opposites of logical form and non-logical content. Knowledge is a dialectical unity of opposites, because form as well as content cannot be reduced each to the other; they are inseparable, but the one is not what the other is. Intuition of life, absorption by tasks of the spirit, religious visions of the absolute Being are fused with the logical concept into a dialectical process which is the love of wisdom. In this process the logical form can transcend itself. In grasping its own logical activity it establishes at the same time the inalienable right of its own non-logical "other." We shall demonstrate this dialectic first for the immanent scientific knowledge, and then for introscendence and transcendence.

II

IMMANENCE

We subsume both the external, sensuous as well as the internal, psychical objects under the term "appearance." The scientific intellect intends to comprehend appearance. It clarifies and orders appearance by abstractions. Its concepts are products of abstraction — and are abstract themselves. The abstract concept isolates an aspect of the object — and disregards the rest.

Every such concept thinks a something (x) in the logical form of identity and universality. Before it is so thought it is not known, but only met with or experienced. "Identity" means that a thought content remains unalterable, eternally one and the same. Without identity no content is intelligible. The concepts must be identical, if they are to be repeated and used as condition of all human community and communication. Only identical concepts can be affirmed and denied in judgments, and the principle of noncontradiction, that A can not be both affirmed and denied, is unconditionally valid for them. "Universality" means that a concept is valid for all members of its own class. The extension of the class implies logical quantity, i.e., degrees of generality. The least general universal is the *individual* concept, valid for all members of its class consisting of one member only. "Julius Caesar," for example. All historical concepts of individual persons, events, and collectives of persons and events, form the logical character of historical sciences. *Particular* universals are valid for some or many cases of their classes. They prevail in descriptive and generalizing empirical sciences. *General* universals are, like individual universals, valid for all members of their classes. Our term "appearance," for example, is valid for all objects of all empirical sciences.

Universals do not exist in the spatial and temporal appearance which they comprehend. They do not appear. They are not events and do not succeed and throng one another successively and simultaneously. They subsist, i.e., they have their logical location in judgments: something (x) is appre-

hended and thought in the relation of concepts. The concept is logically demanded (founded) by that which is to be known. The judgment further subordinates one concept as species under its genus, and coordinates one species with other species under the same genus. (For example: physical and psychical data under appearance.) The judgment is formally valid, according to whether such sub- and co-ordination is logically demanded by the x to be known. The judgment: It must be so and not otherwise, is itself so and not otherwise, demands a definite logical decision, a "yes" or "no." This decision that such is the case, that that which is, is — is itself the logical quality of all judgments.

The logical concatenation of judgments yields systems of knowledge. The principle of this reasoning is the logical demand that all true judgments cohere. This coherence rests on the one hand on the principle of noncontradiction, on the other hand on the verified validity of the judgments which are to be united. Since every concept is identical with itself and different from every other, it is possible to combine judgments which share identical concepts.

The scientific intellect, thus constituted, intends to fix the fleeting world of appearance in lasting structures. He assumes that his own unity may be verified by the appearance. Under this assumption all object-sciences try to organize the data in unified systems of knowledge. Given events and psychical or living functions are rationally apprehended if they can be reconstructed in coherent wholes. Logical identity functions in the repeatability of experiments and in the comparison of what is similar.

Scientism, in distinction from science, operates with abstractions as if they were general intellectual objects, confusing its logical constructions with the irrationally given reality, which is to be constructed by means of logical operations. Scientific objects are falsely identified with their phenomenal data. An object-"metaphysics" or "realism" invents a world which seems to be independent of knowledge. Such pseudo-absolutes always run into self-contradictions and inevitable antinomies, because they contradict the concept of knowledge. They leave out of

their "picture" both the knowing subjects as well as the non-logical appearance of given events.

This pseudo-metaphysical confusion of scientific object-systems with life is particularly dangerous in so-called scientific constructions of social machines, totalitarian shells, guaranteed against all uncertainties, crises, and dissatisfactions.

III

THE DIALECTIC OF IMMANENT KNOWLEDGE

Appearance, in opposition to logically constructed scientific objects, is irrational. Nothing is identical in pure experience. There is no reliability. The appearing *x* is an everchanging flux, other and other amongst its rivulets, "pushing" and "pulling" one another in a myriad of unforeseen spatial and temporal changes, each event split in an infinite variety of aspects, which influence each other, confused and confusing, the realm of the completely inconstant, passing, transitory, surprising mortality — seat and center of all incomprehensibilities.

If we identify the constant conceptual, universal law with "being" intended by knowledge, then its opposite, the irrational becoming, would be its "non-being." And the comprehension of this non-being — the judgment, "Appearance is an irrational flux" — is in itself an eternal, identical, and universal truth. The logical concept thus passes into its opposite, establishing it as its own logical requirement. Logic transcends itself by making evident its own negation as the opposite of itself. In "becoming," dialectical logical unity and its negation are thought as a concrete dialectical whole. The *ordo et connexio rerum* is not identical with the *ordo et connexio idearum*, but that non-identity is eternally identical with itself as this concrete wrestling process of both partners. Appearance behaves neither as species of genus, nor is it (as it appears) universal, abstract, identical. Concepts, on the other hand, are neither spatially or temporally located, lack intuitive content, shape and presence, are discrete and discontinuous against the quali-

tative continuum of appearance, are united according to logical rules.

IV

INTROSCENDENCE

This dialectical negation makes no sense within scientific thinking. It is wisdom or learned ignorance as introspection.

Negation within object-thinking either merely distinguishes some partial content from some other partial content, or distinguishes an abstraction from that which is disregarded by the abstraction. Immanent negations can therefore also be stated positively. That there is no king of America is equivalent to saying that all Americans are busy otherwise. If an object statement "A is B" is denied, then this denial does not mean that there is a negative entity "not-B" in experience. An object-negation is a positive statement, with which a denial is incompatible according to the principle of non-contradiction.

The dialectical negation, however, radically introspects the scientific realm of object-thinking. The scientific intention to know objects cannot, for its purposes, bother about the irrationality of appearance. It does not want to know that. But *this* "not wanting to know" conceals and reveals the dialectical negation. Object-thinking is infected with it, without confessing it. It is infected with wisdom and hates to admit it. If this logical self-knowledge and self-introspection is denied, a "blind spot" for dialectic bars the way to a critical philosophy.

Object-knowledge as dialectical process is known to intend logical clarity and order without being in a position to reach this goal in its purity. But not only that. The logical postulate of clarity of the concept, truth of the judgment, and coherence of reason, believed and directing or regulating the scientific intention as supreme value, at once creates problematic uncertainty, error and untruth as that which should not be. To keep exclusively to finite appearances in their utter relativity and subjectivity as the only possible content of knowledge, to wal-

low in immediate impression, to insist on arbitrary and partial perspectives, to pretend that given experience is all there is — all such finitisms lead to an irrationalistic empiricism, which is condemned by rationalism. In judging and condemning the opposite of logical reason as unreasonable, reason establishes its own opposite as such. In dialectically criticizing its logical ideal, knowledge is getting wise and now knows that it seeks certainty and truth in a treacherous and lying world of its own making. Knowledge as dialectical battle establishes its own battleground. It could not be this struggling reality if the irrational partner were not as necessary as the logical will to truth.

But even when this introscending self-knowledge is absent from the mind of scientists, its dialectic is nevertheless present in the experience which the scientist makes with the history of his science. The history of the sciences teems with errors which were believed to be truths. Again and again that which was established is established as not established. Again and again world constructions, seemingly independent of knowledge, are discovered as incompatible with other equally dogmatic constructions. The products of the "abstract understanding" are time and again dissolved by the same intellect that produced them. The first and exemplary discovery and dissolution occurred when Gorgias demonstrated that the different "natures" of the natural philosophers contradicted themselves and each other, if they were confused with nature itself.

The scientific situation of today, having learned from its history, is such that a more and more perfect logical organization of experience is counterbalanced by a keener awareness of the irrational character of given events. The scientists seem to be satisfied with statistical averages and probabilities. Every construction is known as resting on hypotheses of greater or lesser generality, so that many hypotheses have room side by side. There also seems to be a growing insight into the inseparability of scientific object-construction from practical and theoretical selections based on needs or interests on the part of knowing individuals.

Returning to our dialectical unity of opposites and to knowledge as a dialectical process, we find in it a first example of a non-given introscending kind of reality. Knowledge as dialectical reality is not given, but is being produced as act of the knowing mind, as an intersubjective, struggling communication of truth. Logic, in transcending and limiting itself, proves the possibility of self-knowledge which is not knowledge of given events constructed into scientific objects. In the history of philosophy this dialectical introscension has been formulated as certainty of the uncertainty of object-thinking, as indubitable necessity in doubting the necessity of given facts, as that truth which limits factual truths to be related to appearance with which they are not identical. If we admit this, and only if we admit this, have we reached the point where we can turn to the question of what is the logic of philosophy as a whole. A critical philosophy of science is the first and preliminary step towards wisdom.

V

TRANSCENDENCE

Philosophy, like all other sciences, wants to know reality. But its reflection on a non-given reality renders wisdom dialectical from the beginning. Reality, the absolute universe of philosophy, cannot be thought without including the thinking of it as its own constitutive member. Or, the other way around: in philosophical reflection as act, reality itself is being disclosed, gains subject-existence in the thinker. Man in philosophizing is himself an existing or existential world-conception. This is so not with reference to his empirical appearance and contingency, not with reference to his private states of mind and passions — the psychical is always the private — but it is so with reference to his forgetting his private self in philosophical thought. To be absorbed by a reality which is not disclosed outside of being thought, is equivalent to saying that reality gains in philosophy a subject-consciousness, it undertakes to become conscious of itself. The philosophical concept is not an abstract concept, but it is a concrete attitude of existence, a living world-shape.

Philosophy, in other words, cannot be derived and understood out of abstract generalization about things in the world, but must be instituted as a personal existential communication of world-itself. Philosophical systems neither prove themselves nor disprove one another. No system is ever proved for another system, and no system is able to disprove another system. Transcendent reality — Soul, World, the Absolute — is not open to a common and public inspection, so that all who investigate may come to a reasonable agreement or to a factual truth. Still less is reality a private psychological affair relevant only to private individuals as their dream-worlds are. Philosophical systems are engaged in a never-ending dispute concerning an ultimate and true reality, and must therefore meet in a dialogue. They understand each other even in profoundly misunderstanding each other. Philosophy's existential actualization of reality prevents any system's claim to be the universe, which it represents. Each becomes a living symbol of the universe.

None is this universe as such. Transcendence maintains itself.

VI

PHILOSOPHY OF CULTURE

The logical function of philosophy, its truth-claim, is embedded in the concrete and living whole of philosophical existence. This existence is inseparable from a social-cultural matrix. Philosophy, therefore, becomes a symbolic gesture, an expression and a testimonial of human culture. Man expresses through the medium of logical statements how the world is treating him. Art does the same in images, as philosophy does in logical reflection. The philosophical thought has this advantage over the image of art, that it transcends itself, that it reaches over and thinks its own living essence in the mirror of the arts. Art is in philosophy, an essential part of its universe, and philosophy is in art. And as art creates many shapes and styles, which replace one another, without cancelling their ever-living significance, in the same manner the classical *gestalt-*

en of philosophy go on living side by side, unobliterated and unforgettable, because they all relate themselves to the same absolute universe, which relates itself in and through them. Those formations and transformations of philosophy are necessary, because the universe is too rich to be paid out in one kind of coin only.

What is true for a philosophy of art is true for all non-logical values of life. Philosophy, as logical reflection on the meaning of human existence, assembles all values and unites them in its own dimension or medium. In reflecting on the meaning of practical existence, philosophy becomes ethics. It formulates in universal form and thus brings to self-consciousness the motive actions of practical life. Just as something becomes a theoretical-scientific object, if it is apprehended by the subject in logical forms, so something becomes value when it is related to and subsumed under the practical needs of the subject. Philosophy of practical values grows out of feelings of respect and disrespect, out of general ends and purposes, and becomes ethics in reflecting on the fundamental principles of law, morality, and politics. Things, persons, teleological institutions are related to men willing or not willing, for whom they assume the value of urges, purposes, life-justifications. Philosophy thus expresses the self-consciousness of a social and existential time or age. But in all those ethical problems it maintains its very own interests, which is man himself as acting existence. It defends the dignity of man in his practical systems. What we have seen in the scientific world as necessity of error, recurs in the practical world as necessity of evil. Man creates evil in wanting the good. In discovering the meaning of his practical existence, he at the same time covers it in an infinite practical confusion.

In the whole philosophy of scientific, practical and artistic culture, human unity is revealed as a unity of tensions. This unity is broken, when one or the other of the poles in this many-dimensional polarity prevails over other poles. Philosophy mediates, checks, and balances by virtue of its *Logos*. Since all those modifications of human existence are logically clarified, man comes to understand himself as a whole, and

in a whole. The function of philosophy is to harmonize the disharmonious, to think and to be existential unity.

It can never be more than a unity of tensions. In those tensions we have to distinguish a double dialectic. The "objective" truth, the practical good, the aesthetic beauty are equivalent contraries. The dialectic between them is a dialectic of contrary opposites. In each of the cultural value-dimensions of existence, however, there is also a dialectic of contradictory opposites. The scientific, practical and aesthetic norms make possible and necessary their own negations. Here one side exists only in overcoming and denying its own opposite, judged to be that which should not be. The good, for example, lives as much on the overcoming of evil, as evil lives in the act of breaking down the good. We have found the model of this dialectical struggle in the dialectic of scientific knowledge as process.

VII

PHILOSOPHY OF RELIGION

Man creates his own existence as a problematic existence of tensions. In recognizing and acknowledging this, he enters religion. The confession of sin is the origin of religion.

Philosophy meets in religion that transcendence which is present in faith. Even in the nature-religions transcendent powers are worshipped, which are not created by man, and which are not objects of knowledge, but *numinosa*, on which man depends. He expresses this dependence in fear, joy, and thanks. Without this absolute feeling of dependence he would not be human.

In the world-religions this dependence is enlarged to comprise his cultural values also. They are experienced as flowing from an absolute and divine source. The Platonic term for this is *creation* (*Philebus*, 26). Existence together with its values is created. The problematic human tension is thereby transcended, justified, and reconciled.

In so far as philosophy itself is also open towards transcendent reality, it will recognize in religion a concern similar to

its own. In reflecting on the meaning of religious existence, it will logically apprehend and penetrate this similarity and difference from itself. This task is both facilitated and made more difficult as religions themselves produce theologies, in which they claim truth for their particular forms of religion.

Religious life is expressed in imaginative symbols (such as heaven, hell, angel, devil) whereby human existence is tried in the absolute. Trying decisions are occasioned by them. Concrete religious communities are assembled in such "names," and live their faith in the transparent symbols of prayer, cult, sermon. Practically, religions embrace man in unconditional love as fellow creature and in compassion as fellow sinner. Religious practice reconciles the plurality and tensions of human culture value in the absolute. Sin is forgiven, if man ceases to absolutize falsely his immanent and contingent values. It includes ethics, but does not replace it, because the human-practical sphere produces its own "objective" situations and tasks flowing from them, regardless of religion.

Philosophy, as philosophy of religion, functions in the same manner here as before: logical reflection understands and justifies the religious form of existence and of symbolic thought. The impartial and formal emptiness and wideness of logic make possible a reflection, in which all dimensions of reality, as they converge in man, are elucidated. Reasoning man keeps them and keeps himself in an open balance.

VIII

THREE METAPHYSICAL POSSIBILITIES

If we subsume the philosophy of scientific, practical, artistic, and religious culture under the three levels of immanent, introscent, and transcendent knowledge of reality, then we have the following three possibilities of ultimate or metaphysical orientations.

The first we call *empiricism*. Empiricism mistakes the one realm of given experiences as the world. Science replaces metaphysics. Positivism is a negative, discouraged empiricism.

As "logical positivism" it is reduced to talk correctly on correct talking without any reality whatsoever to talk about. As pragmatism, empiricism is all out for practical manipulation of things, in order to install a paradise on earth supplied with all the latest and most recent gadgets of comfort and convenience and time-consuming time-saving machinery. Empiristic art is sensualistic, sensational. Empiristic law is primarily concerned in the protection and organization of material interests. Its anthropology dissolves values and ideals in psychology and pathology. Its ethics is hedonistic and utilitarian, in its extreme the attitude of a clever beast of prey. Its wars are carried on for raw-materials and markets. Its philosophy sees in all philosophies ideologies, hypocritically veiling that "which is in the senses" — *nihil est in intellectu quod non fuerit in sensu.*" A victorious empiricism reduces man to an object, theoretically as well as practically. Man can be managed. But its victory is also its end. The treacherous nothing of all which is finite and mortal is being experienced as self-annihilation and nihilism. Life becomes hectic and boring at the same time. Its convulsions and spasms recur in ever shortening cycles. The metaphysical life, to absolutize the relative and the finite, needs stronger and stronger injections to maintain as well as to conceal itself.

The second possibility is oriented in the existential center of knowledge. We call it objective, critical *idealism*. It is interested in the ideal norms which become human reality in being actualized by culture. Idealism is *paideia*: it desires to ennoble life in dedicating it to the realization of ideals of knowledge practice, and art. Its art presents life as heightened, idealized appearance. Its law protects the inalienable human rights, the dignity, responsibility, integrity of the individual person. Its anthropology reconstructs the soul from the values pursued and from objective teleological wholes, in which the soul participates, for which existence is risked. Its ethics is educational. Religion is interpreted as service to purely human ideals. Its philosophy justifies the right of ideal forms and norms not to be derived from experience, as when Leibniz replies to Locke's "*nihil est in intellectu quod non ante fuerit*

in sensu" with "*nisi intellectus ipse*." The world becomes here "the material of my duty." Idealism is at home both in a personalistic-moral philosophy of freedom and in a contemplative aesthetic philosophy of a festive life. Its limitation is its own dissatisfaction with the obstacles which it creates. Disappointment and exhaustion threatens it with dissolution of its enthusiasm.

The third possibility is oriented in transcendence. It seems to become event and possession in all *religious* metaphysics. The all-embracing one and unique universe of Being, the Absolute, is becoming transparently present in all other beings which it is not. "A is non-A" is the formal expression of its dialectic paradox. Experienced appearance and actualizing existence are media and means, through which the transcendent absolute is honored. Religion prevails in a transcendent culture. Its art is symbolic, not created to seem blessed in its own noble perfection, but to point towards a beyond. Its law protects this sanctification of life and punishes blasphemy. Its wars are religious wars. Its anthropology sees man in an absolute decision between damnation and salvation. Its philosophy is a rational formulation of the superrational. Its limitation lies in the impossibility of embalming the absolute in experiential and existential shapes. It is wisdom to know that the absolute is never caught and ascertained in human institutions. This wisdom is one with the love of wisdom. All three possibilities constantly threaten one another. Their struggle is the metaphysical basis for the rhythms of history. History is the shadow cast by human metaphysics. Philosophy is this dialogic, and this philosophy occurs twice: one time in its "world-sense," as Kant calls it, as the totality of a world view and evaluation of life, and again as its technical self-consciousness in a logical reflection, its "school-sense."

IX

DIALECTICAL WISDOM AND FORMAL LOGIC

All three major metaphysical possibilities are true in the sense that each truly formulates an aspect of reality. According

to formal logic, however, contradictory systems cannot be true.² If one is true the others must be false, or all must be false. If it is true that reality is the sum of experienced appearances, then it cannot be true that the world is disclosed in an infinite ideal task of existence. And if this is true, then it cannot be true that it is an eternally perfected absolute Being. This formal contradiction is valid if we keep only to the logical formulation of philosophical systems. From the point of view of an existential dialectic, however, the formal contradictions merely serve to make real distinctions, self-differentiations of reality articulate. The fundamental logical postulate of unity not only transcends and preserves the formal contradiction, but needs it for its own self-realization.

No one-sided world-view corresponds to the full dialectical concept of wisdom. And dialectic cannot be developed outside and apart from a clear articulation of all opposites within it. Those opposites, which are abstractly excluding one another, are in reality engaged in a concrete dialectic. They talk together and against each other. But philosophy itself and as a whole consists precisely in this dialectic. In it, it approaches its own ideal of concrete thinking. It functions in the critique of abstract or one-sided standpoints, in recognizing their right as well as their limitation. As many specialists are needed to approach a concrete knowledge of an organism in its totality, so many abstract world-views are needed to approach the knowledge of a concrete absolute.

"Concrete" is derived from "*concreresco*," and means a "growing together" of many functions into a living "organic" whole. Each philosophical constitution of world and existence, embodied in works and social habits, expressed in symbols, and formulated in thought, is a concrete universal, a unity pervading all of its members. One who thinks such a concrete universal is in turn absorbed by and in it. Philosophical contemplation, dialectical synopsis, as Plato says, makes of the

² "If philosophers have produced a great many contradicting systems, all except one must be wrong; and it is even probable that all are wrong." Hans Reichenbach. *Proceedings, American Philosophical Assn., Phil. Review*. Vol. XXI, 1947-48.

individual an organ of an "objective" state of affairs, analogous to an artistic identification with a work of art or to a religious reverence.

But one concrete universal becomes abstract again, when it is seen in relation to other historical formations of philosophy. History of philosophy demotes each of its shapes to an abstract side of its whole movement. Philosophical thinking grows more and more concrete as it becomes more and more flexible. National and epochal styles of philosophy, supplanting one another, are nevertheless participating in one common concern with reference to one common reality, to which they all contribute, and which they all enrich.

History of philosophy teaches the same lesson that we learn in our life, at least if it is maturing towards a greater concreteness. I begin somewhere with a simple philosophy, endeavoring to get settled in it with my few possessions. But then I meet you, who have a different perspective. We are obliged to listen to one another. Our starting-points get changed in the process. A becomes (A in B), and B becomes (B in A). In letting you in, my own life is altered. This is the simple and fundamental law of dialectical growth in the history of philosophy as well as in the history of individual philosophers. At first this dialectic is confusing and disquieting, but then it is hardening. We become "hard-boiled," as we say.

The concrete universal grows richer in proportion to its growing extension. This is the reverse of the abstract concept, which grows poorer in proportion to its greater generality. The more things its abstract unity denotes, the more details have to be dropped from it. The most exact and general abstractions are almost completely empty of content.

Hegel speaks of the self-movement of the concrete or speculative concept. Feuerbach and Marx misunderstood this and flattened it empiristically. It should be interpreted in this way, that human knowledge produces human history as an existentially real world-formation (*Weltgestalt*). Man produces himself as human in producing knowledge. In opening reality, reality itself becomes articulate and actualized. How-

ever, it is by the same act also limited and made finite. In making reality definite and finite, philosophical knowledge puts itself in contradiction to the intended Absolute. The Absolute appears to it now in the form of a dialectical negation. Man cannot cling to any one system without engendering an opposite, with which his own position is fraught. The absolute transcends and circumscribes any immanent fixation and forces it into a dialectical process.

The growth of philosophy is not merely a gain, but also a loss. On each level we meet a genuine human claim of truth, which is engaging our soul. Each transition is therefore also a crisis. To the impossibility existing absolutely corresponds the possibility of not existing as we do. The existential thinker produces himself as one whose existential possibility is always in danger. What I may become is never a fact of object-thinking; it is an open problem. Everything that has become might just as well not have become. Existing is contingent.

The concrete universal, the dialectical negation, and the dialectical process as self-movement is not only the historical law of philosophy, but it is the logic of philosophizing itself. Dialectic is the logic of philosophy. It does not guarantee a straight progress, but reveals a tragic rhythm.

In the mighty procession of centuries, philosophizing humanity moves from achieved metaphysical systems through the violent crisis of doubt and break of tradition into the new serenity of idealistic freedom and synthesis; from there it moves in tiring and slowing steps to the anti-synthesis of empiristic civilizations, ending in the convulsions of despair, greed, and nihilism. It then repeats this rhythm in a new and enhanced modification.

This procession is perhaps a divine spectacle, which the blissful and eternal perfection plays with itself; perhaps a suffering and struggling God wrestles with its own creation for his deliverance; perhaps it is nothing but a flaming up of illusions and disillusion in front of a black foil of nothing and of death.

Be this as it may — all knowledge, of the given as well as of the non-given *x*, believes in truth; in the logical apprehension of truth lies a possibility of an ever-to-be-renewed reconciliation: the absolute is both revealed and concealed in all dimensions and directions operating and functioning in it. Among them is man. In thinking a universe he awakens to his own historical existence. This existence, in turn, has no ground without object-sciences concerned with the past and with that which has become. The three levels of knowledge are inseparable aspects of wisdom. And in this correlation rests our hope of harmony, balance, and peace. For if we do not find unity of opposites in ourselves, we can never expect to find it in the world about us. And what we find in us now is the seed of things to come. The thought of one century becomes action in the next.

Summing up: The dialectical unity of reality is the criterion of truth. It is the ground of immanent, introscendent and transcendent knowledge.

By virtue of the logical unity of all thinking, man is enabled to harmonize his scientific, practical, creative, and religious life. Truth is the foundation of a viable inter-subjective community.

Reason is unique in the sense that it alone can distinguish itself from itself and remain identical in its self-diremption. It enables man to find agreement with reality as his own other, as himself, and as transcendent whole.

But it is also true that man cannot help missing truth, because he cannot help having finite, one-sided and limited perspectives. Dialectic is the logic of philosophy in comprehending the necessity of opposites and in absorbing them into a growing concreteness.

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THE REALITY OF THE ARISTOTELIAN SEPARATE MOVERS

I

The separate substances of the Aristotelian *Metaphysics* have received an amazing variety of interpretations in the modern era. A glance over the commentaries and monographs and periodical literature of the present century makes the wide divergence of opinion abundantly evident.

These substances have been considered in recent times, as in traditional interpretation, to be identical with the immobile Movers of the *Physics*. Both *Physics* and *Metaphysics* refer to the same *separate* substances.¹ On the other hand, the immobile Movers of the *Physics* have been identified with the *immanent* souls of the Heavens, and so sharply distinguished from the separate substances of the *Metaphysics*.² Then in the opposite extreme, the Movers of the *Metaphysics* have been completely identified with the celestial souls.³ Or again, the first only of the Movers has been declared separate, and the others identified with the different sphere-souls, among

¹ E.g., W. D. Ross, *Aristotle's Physics* (Oxford: Clarendon Press, 1936), pp. 99-100. The commentators in general, with the exceptions about to be noted, do not treat the possibility of a distinction between the two sets of Movers. I. Dockx, "De Theorie van den Onbewogen Beweger bij Aristoteles," *Tijdschrift voor Philosophie*, I (1939), 792-800, and P. Merlan, "Aristotle's Unmoved Movers," *Traditio*, IV (1946), 2, n. 8, deliberately reject such a distinction, though without answering in detail the arguments which support it.

² J. Paulus, "La Théorie du Premier Moteur chez Aristote," *Revue de Philosophie*, XXXIII (1933), 259-294; 394-424. A. Nolte, *Het Godsbeeld bij Aristoteles* (Nijmegen-Utrecht: Dekker & van de Vegt, 1940), pp. 126; 172-175. Paulus (*op. cit.* p. 406, n. 18) finds this interpretation in mediaeval sources (e.g., St. Thomas Aquinas and Henry of Ghent), and claims (*ibid.*, p. 422) that it accords with the over-all conception of the Greek commentators.

³ C. Werner, *Aristote et l'Idéalisme Platonicien* (Paris: Alcan, 1910), pp. 344-354. R. Mugnier, *La Théorie du Premier Moteur et l'Evolution de la Pensée Aristotélicienne* (Paris: Vrin, 1930), pp. 124-171.

which is the first Mover of the *Physics*.⁴ In still another interpretation the first Mover alone is separate, but the other immobile Movers are held to be the divine thoughts, identical with the first Mover.⁵ Even the first Mover has been interpreted as a thought in the mind of some other Being, as merely an ideal or standard of goodness which does not imply — though it need not exclude — any corresponding existent reality in the Aristotelian universe.⁶

The separate substances have further been explained as species of a genus.⁷ But such a genus has been held inadmissible, and the Movers have been related in the "prior and posterior" manner of the Platonic Ideal Numbers.⁸ The first Mover has been distinguished from the others as immobile both *per se* and *per accidens*, while the other Movers are of a

⁴ M. Bousset, "Sur la Théologie d'Aristote: monothéisme ou polythéisme?" *Revue Thomiste*, XLIV (1938), 801-804.

⁵ H. Jackson, "On Some Passages in Aristotle's *Metaphysics*," *Journal of Philology*, XXIX (1904), 144.

⁶ B. A. G. Fuller, "The Theory of God in Book λ of Aristotle's *Metaphysics*," *Philosophical Review*, XVI (1907), 180. G. A. Lindbeck, "A Note on Aristotle's Discussion of God and the World," *Review of Metaphysics*, I (1948), 104-106. Nolte (*op. cit.*, p. 150) reduces W. Bröcker's (*Aristoteles*, Frankfurt am Main: Klostermann, 1935) interpretation to a similar view.

T. M. Forsyth's conception, in "Aristotle's Concept of God as Final Cause," *Philosophy*, XXII (1947), 112-123, is difficult to classify from this standpoint. The primary movent is for him "an indwelling spirit whose presence in all things moves them to the realization of ideal values" (*ibid.*, p. 122), and as transcendent is "the unconditioned ground of all existence and the ideal goal and standard of perfection for individual finite beings" (p. 123). In so far as such a movent can be considered as separate from the world process, it would seem to be merely an ideal.

⁷ H. A. Wolfson, "The Knowability and Describability of God in Plato and Aristotle," *Harvard Studies in Classical Philology*, LVI-LVII (1947), 243-245.

⁸ P. Merlan, *Traditio*, IV (1946), 10-12; 24, nos. 2 and 4. Cf. A. J. Festugière, "Les Premiers Moteurs d'Aristote," *Revue Philosophique de la France et de l'Etranger*, CXXXIX (1949), 66-71.

nature that is immobile *per se* only.⁹ On the other hand, this verbal distinction in the text has been seen as making no essential difference whatever in the Movers.¹⁰ The plurality of these Movers has been declared an open contradiction with a supposed 'monotheism' of the Stagirite,¹¹ or explained historically as a different phase in the chronological development of his thought.¹²

⁹ A. Mansion, "La Genèse de l'Oeuvre d'Aristote d'après les Travaux Récents," *Revue Néoscholastique*, XXIX (1927), 340. R. Jolivet, *Essai sur les Rapports entre la Pensée Grecque et la Pensée Chrétienne* (Paris: Vrin, 1931), p. 74. H. von Arnim, "Die Entstehung der Gotteslehre des Aristoteles," *Wien. Sitzb., Phil.-Hist. Kl.*, 212.5 (1931), 69-71; cf. pp. 43-45. A. Nolte, *op. cit.*, pp. 143-144; 174. H. Wolfson, *loc. cit.*, p. 245.

¹⁰ J. Paulus, *op. cit.*, pp. 417-418. I. Dockx, *op. cit.*, p. 771, n. 30. The difference certainly applies to the Movers of the *Physics*; cf. *Ph.* VIII 6, 259^a28-31; J. Paulus, *op. cit.*, pp. 275-277. But in the sentence of the *Metaphysics* (*Lambda* 8, 1073^a26-34) where all the Movers are being treated, both the first (*27-28) and the others (*33-34) are designated in exactly the same terms — *per se* immobile and eternal. If Aristotle had meant any contrast by the use of *per accidens* (*24-25), he should have employed the term in this sentence, and not merely in the preceding sentence where only the first Mover was under discussion.

As the Books of the *Metaphysics* are enumerated differently by modern authors in treating the present subject — e.g., Paulus (*op. cit.*) cites *Lambda* as Book XI — it is better to use the traditional Greek letters. Synoptic tables of the different enumerations are given by A. Mansion, *op. cit.*, p. 307, n. 2, and A. Nolte, *op. cit.*, p. 5, n. 9. The use of the Greek letters will make it unnecessary to repeat the title *Metaph.* Other Aristotelian works will be cited with the abbreviations listed in Liddel and Scott, *A Greek-English Lexicon* (1940), I, xix.

¹¹ M. de Corte, "Le Pluralisme dans la Théologie Aristotélicienne," *Revue Belge de Philologie et d'Histoire*, IX (1930), 869-877. In "La Causalité du Premier Moteur dans la Philosophie Aristotélicienne," *Revue d'Histoire de la Philosophie*, V (1931), 105-146, de Corte shows the contradictions between the characteristics of the first Mover of the *Physics* and that of the *Metaphysics* when they are considered solely in the Aristotelian background.

On the inappropriateness of applying the terms "monotheism" and "polytheism" to the Aristotelian philosophy, cf. P. Merlan, *op. cit.*, pp. 14-20. The same should hold also for "henotheism."

¹² W. Jaeger, *Aristoteles* (Berlin: Weidmann, 1923), pp. 366-371. H. v. Arnim, *Gotteslehre*, pp. 69 ff. W. K. C. Guthrie, "The Development of Aristotle's Theology," *Classical Quarterly*, XXVIII (1934), 96-98.

Needless to say, various nuances and interlockings of these interpretations complicate the situation still further.¹³ Many of the difficulties, it is true, arise from the deepest problems in Aristotelian thought, and have busied the commentators for centuries. But in the traditional controversies, the unmoved Movers were always looked upon as real and independently existing entities. There was difference of opinion about the precise level of reality to be assigned to them. But that they required no subsistent reality at all, is something comparatively new. The view that an unmoved Mover could be merely a thought of some other Being, in the sense of an ideal or standard, is distinctly modern and invites a fresh consideration of the texts from this standpoint.

But can the topic be isolated for a short treatment without delving too deeply into the exhausting problems of the Aristotelian Primary Philosophy?

To a certain extent, probably sufficient for present purposes, it can. Some fundamental doctrines, however, will have to be accepted on appeal to the obvious meaning of the text. Other important tenets may be considered as admitted. In this way the discussion may be kept within reasonable bounds.

That an immobile Mover of the *Metaphysics* can function *only* as a final cause, and that its causality requires the Aristotelian Heavens to be animated, may be taken as admitted in this question, and indeed should now be beyond controversy.¹⁴

¹³ This survey has been limited to the present century. The inclusion of nineteenth century interpretations, in the sense of one or the other views just noted, or in Hegelian or pantheistic directions, would needlessly complicate the issue.

¹⁴ In the last century a well-known controversy on this subject centered around E. Zeller, who denied creative activity in the Aristotelian first Mover, and F. Brentano and A. Bullinger, who asserted it. That the premises for creation are found in Aristotle, even though the conclusion is not drawn, was upheld by E. Rolfes, *Die Aristotelische Auffassung vom Verhältnisse Gottes zur Welt* (Berlin: Mayer & Müller, 1892), pp. 46-66. This mitigated view of the efficiency has been carried over into the present century by Rolfes, *Die Philosophie des Aristoteles als Naturerklärung und Weltanschauung* (Leipzig: Meiner, 1923), pp. 343-344 and 368-375, and others, for example R. Jolivet, *op. cit.*, p. 77, and F. X. Meehan, *Efficient*

Both these tenets, in fact, are emphasized in a recent thought-provoking article¹⁵ which goes on to conclude "that on Aristotle's grounds, it is superfluous to assign existence to God."¹⁶ Also, there is obviously no doubt that Aristotle himself considered his immobile Movers to be living Beings, enjoying the highest and fullest type of life.¹⁷ The text is clear and precise

Causality in Aristotle and St Thomas (Washington: Cath. Univ. Press, 1940), 85-97. The result of the research occasioned by the controversy was well expressed by Sir David Ross, *Mind*, N. S. XXIII (1914), 291, — the text of Book *Lambda* shows there is no escaping the fact that for Aristotle the first cause moves the world only as something loved. Similarly A. v. Pauler, "über den Theismus des Aristoteles," *Archiv für Geschichte der Philosophie*, XXXVII (1926), 210; A. Nolte, *op. cit.*, p. 159. The type of efficiency seen in the separate Mover by K. Elser, *Die Lehre des Aristoteles über das Wirken Gottes* (Münster: Aschendorff, 1893), pp. 92-96, and G. A. Lindbeck, *Review of Metaphysics*, I, (1948), 100-101, does not exceed the limits of Aristotelian final causality, since the final cause as final really causes motion. The efficient causality found by R. M. Forsyth, *Philosophy*, XXII (1947), 120-123, does not belong to the first Mover as transcendent. On the other hand, I. Dockx, *op. cit.*, p. 784, still tries to interpret the texts of Book *Lambda* as merely giving an example of how something can move without being moved, though he admits (*ibid.*, p. 800) that it is difficult to ascribe efficient causality to the immobile Mover of the *Metaphysics*. A. Mansion, "L'Action du Dieu-Moteur d'Aristote sur le Monde," *Library of the Xth International Congress of Philosophy* (Amsterdam: North-Holland Publishing Co., 1949), I, 1092, sees no mention of efficient causality in the text, not even to exclude it, and thinks that Aristotle left the meaning vague.

On the animation of the Aristotelian Heavens, cf. O. Hamelin, *Le Système d'Aristote* (Paris: Alcan, 1920), p. 356; J. Paulus, *op. cit.*, pp. 266-276 and 286-290; A. Nolte, *op. cit.*, pp. 41-50. The argument that the first Heaven is not animated, because being imperishable it cannot be composite (I. Dockx, *op. cit.*, p. 768), seems very unconvincing. The Aristotelian Heavens, though not composed of heterogeneous material elements, must nevertheless be composed of matter and form.

References showing the unanimity of the Greek commentators in asserting this animation are given by Paulus, *op. cit.*, pp. 401, n. 9; 422, n. 39.

¹⁵ G. A. Lindbeck, *Review of Metaphysics*, I, (1948), 99-101.

¹⁶ *Ibid.*, p. 105.

¹⁷ Cf. *Lambda* 7,1072^b20-30; 9,1074^b33-35. In this sense the separate substances are understood in the Greek tradition, as is evident from the *Paraphrasis* of Themistius (ed. Landauer, Berlin: Remer, 1903 — *Comm.*

on this point, and is not disputed in the present context.¹⁸ But the question is whether the Stagirite's reasoning justifies this conclusion. Would not a standard or ideal that has no existence outside the thought of the one who strives after it suffice to fill the role of an Aristotelian immobile Mover? Does the Stagirite's explanation of the universe actually require a separate Mover or Movers which have their reality and existence — and in this sense "substantiality" — independently of the thought of the Beings which strive to imitate their perfection?

That, then, is the point in question. Some preliminary difficulties of terminology and of procedure, though, should first be noted.

In the Aristotelian vocabulary there are no exactly corresponding terms to the modern "reality" and "existence." "Substance," too, is often a misleading translation of *ousia* (which means rather "Being-ness" or "entity"¹⁹), but it is traditional and is probably sufficient for the present context. These points of terminology, however, suggest care in translating the Stagirite's thought into present-day equivalents.

In regard to procedure, Aristotle does not outline and treat a problem according to any modern technique. As a result, he does not answer questions in the way a modern

Graec. V, 5) pp. 22-23, and from the problems treated by the Greek commentators. Alexander of Aphrodisias, for instance, explains that the pleasure in the life of these substances is not the pleasure which follows upon an affection, but that which necessarily accompanies thinking (*Fr.* 31, ed. Freudenthal, *Abh. Berl. Akad.*, Phil.-Hist. Cl., 1884, p. 110.15-25). Such a problem takes for granted a life in the separate substances which involves real enjoyment.

¹⁸ Cf. B. A. G. Fuller, *Philosophical Review*, XVI (1907), 180. G. A. Lindbeck, *op. cit.*, p. 106.

¹⁹ The English "Beingness," however, cannot be given the concrete or individual sense usually required by the Aristotelian *ousia*. "Essence" and "reality" are not satisfactory. "Entity" is probably the best suited English translation (cf. P. Merlan, *op. cit.*, p. 8), but it lacks sanction in tradition and so its use would require a long justification. On the reasons for retaining "substance" where possible, cf. C. Arpe, "Substantia," *Philologus*, XCIV (1940), 65-78.

reader would frame them. His extant writings are in the form of school *logoi*. In these school *logoi*, the viewpoint of the moment and the question of dependence on other *logoi* are of paramount importance for interpretation.²⁰ In this setting is an Aristotelian problem to be approached.

The argument demonstrating the nature and Being and plurality of the separate Movers is found in only one²¹ such *logos*, which has come down to posterity as Book *Lambda* of the *Metaphysics*. This treatise shows no methodical connection with any other Book of the *Metaphysics*,²² and cites only the physical writings.²³ Accordingly, it can be treated almost exclusively on its own merits, except for the background of the *Physics* and *De Caelo*. The other treatises need be cited only for illustration or confirmation.

As to the internal unity and the chronology of Book *Lambda*, the problem is not so simple. The eighth chapter has been considered to be of different date and different inspiration from the rest of the Book;²⁴ and within this eighth

²⁰ This nature of the treatises as school *logoi* is brilliantly explained on philological grounds by W. Jaeger in *Studien zur Entstehungsgeschichte der Metaphysik des Aristoteles* (Berlin: Weidmann, 1912).

²¹ The proofs in *Physics* VII and VIII establish immediately only the efficient cause of motion, not the separate and final cause. Cf. J. Paulus, *op. cit.*, pp. 265-285.

²² It seems to depend on Book N for some of its material (cf. W. Jaeger, *Aristoteles*, pp. 232-236). But N contains no certain reference to any other Book of the *Metaphysics* (cf. P. Thielscher, "Die Relative Chronologie der erhaltenen Schriften des Aristoteles nach den bestimmten Selbstzitaten," *Philologus*, XCVII, 1948, p. 259), and so does not establish any methodical connection of *Lambda* with the other Books.

²³ *Lambda* 8,1073^a32, to *Physics* and *De Caelo*; cf. W. D. Ross, *Aristotle's Metaphysics* (Oxford: Clarendon Press, 1924), II, 384. On other alleged references cf. Ross, *op. cit.*, I, xxvii-xxviii.

²⁴ W. Jaeger, *Aristoteles*, pp. 366-368. Jaeger dates the eighth chapter as very late, because it seems to speak (1073^b33) of Callippus as already dead. This dating seems to have encountered no objection.

The rest of Book *Lambda* is dated early by Jaeger, on doctrinal grounds. The other modern chronologies locate it differently. H. v. Arnim, *Wien. Stud.* XLVI (1928), 33-36, placed it later than the *Magna Moralia*, which he dates as after 338; but in the *Gotteslehre*, p. 54, he dates the

chapter one short but important passage²⁵ has been held to differ similarly from its immediate context. More recent criticism, however, has sufficiently established the internal unity of chapter eight,²⁶ and has even asserted that the whole of Book *Lambda*, including the eighth chapter, was written at the same time.²⁷ In any case, there is no sufficient reason today for doubting that the whole of Book *Lambda*, whatever may be the chronology of its different sections, was assembled by Aristotle himself as a unified *logos* or *methodos* according to its present order of treatment. The Book, therefore, may be safely approached as a methodical unit, and a problem may be followed according to the order of presentation within this treatise.

II

In its opening sentence, Book *Lambda* professes to be

main part of *Lambda* as earlier than 338 because it seems to speak (7,1072^b31) of Speusippus as still living. E. Oggioni, *La "Filosofia Prima" di Aristotele* (Milan: Vita e Pensiero, 1939), pp. 8-9 and 12, accepts this latter dating of v. Arnim's, but considers (*ibid.*, pp. 13-14; 60-61) that *Lambda* represents the final stage of development in the Primary Philosophy, and so is later than all the other Books of the *Metaphysics*. F. Nuyens, *Ontwikkelingsmomenten in de Zielkunde van Aristoteles* (Nijmegen-Utrecht: Dekker & van de Vegt, 1939), pp. 166-167 and 315, puts *Lambda* in the final period of Aristotle's life, even later than *De Anima*. Thielscher's criterion (*op. cit.*, p. 258; cf. table *opp.* p. 264) locates it quite centrally.

The only philological indications for dating are the use of the present and imperfect tenses (once each) in referring respectively to Speusippus and Callippus, and the reference to the physical works. The other criteria are all doctrinal.

²⁵ Jaeger (*Aristoteles*, pp. 378-379) considers it to be a *later* addition. H. v. Arnim (*Gotteslehre*, pp. 72-73) sees in it a survival from the *earliest* draft. De Corte, *Revue Belge de Philologie*, IX (1930), 876, thinks that its proper location is at the end of chapter seven.

²⁶ A. Nolte, *op. cit.*, pp. 147-148. P. Merlan, *Traditio*, IV (1946), 12-14. A considerably weaker defense of this internal unity is found in Paulus, *op. cit.*, pp. 418-419; cf. p. 413, n. 27.

²⁷ A. Nolte, *loc. cit.*, p. 147. The difference of style in chapter eight from the rest of *Lambda* is minimized by Paulus (*op. cit.*, p. 413, n. 27). It is explained by Nolte (*loc. cit.*) on the ground that Aristotle would have to have before him a material carefully worked out when dealing with astronomical details, in which he did not hold himself an expert.

dealing with substance.²⁸ It distinguishes three substances. Two of these are sensible (one eternal, the other perishable), and the third is immobile.²⁹ Sensible substance is changeable. It is considered as evident, and as evidently plural.³⁰ It is treated by natural philosophy.³¹

Immobile substance, on the other hand, is tentatively assigned to a different science.³² It is not seen as immediately evident. One has to show, first that there is such a substance,³³ and secondly to determine whether it is unique or plural.³⁴

That there is such a substance is demonstrated by one argument only.³⁵ This argument is based on the act and potency seen in sensible movement. It is developed in three stages.

The first stage³⁶ proves that there must be some eternal substance. This initial conclusion follows from two premises. The first premise is that substances are prior to all other Beings — namely, to quality and quantity, etc., and to movement. This doctrine had already been established in the opening chapter of *Lambda*.³⁷ The second premise is that motion and time are eternal, time being either identical with or following upon movement. No proof is offered. The doctrine seems to be accepted from the *Physics*.³⁸ From these two premises it follows that there must be some eternal substance; for motion always presupposes substance, and if motion is eternal, the substance presupposed must be equally

²⁸ *Lambda* 1,1069^a18.

²⁹ *Lambda* 1,1069^a30-36; 6,1071^b3-4.

³⁰ *Lambda* 1,1069^b3 ff.

³¹ *Lambda* 1,1069^a36^b1.

³² *Lambda* 1,1069^b1-2.

³³ *Lambda* 6,1071^b4-5.

³⁴ *Lambda* 8,1073^a14-15.

³⁵ *Lambda* 6,1071^b5-22.

³⁶ *Lambda* 6,1071^b5-11.

³⁷ *Lambda* 1,1069^a19-26.

³⁸ *Ph.* VIII, 1-2.

eternal. The unicity or successive plurality of such substance does not affect the argument at this stage. All that is required is that there always be some substance prior by nature to the movement.

The second stage³⁹ of the argument shows that this substance has to be something *acting*. If it is only *able* to cause motion, motion need not follow; for it is possible that something which merely has the *power* to cause motion may not actually be causing it. The eternal substance in question, then, must actually be causing motion.

For this reason the Platonic eternal substances, the Forms, are not sufficient, unless there is in them a principle able to cause motion. Even this is not sufficient, or any other (Platonic) substance besides the Forms. If the substance is not actually causing motion, the eternal motion of the Heavens will not follow. Here the Platonic Forms are considered as merely potential, and not having of themselves the actuality required to cause the celestial motion.

The final stage⁴⁰ proves that the cause required must not merely be actually causing motion, but that its very substance must be act. For if it were potential, i.e. if it were equally able to be or not be, it would still be possible for it not to be, and so the motion need not be eternal. Such substances (here the plural is used⁴¹), therefore, can have no matter. Matter, as had already been shown,⁴² means *potency* for change.

³⁹ *Lambda* 6,1071^b12-17.

⁴⁰ *Lambda* 6,1071^b18-22.

⁴¹ H. v. Arnim (*Gotteslehre*, p. 70) considers this sentence (^b20-22) to be a later insert, on account of the use of the plural. A. Mansion, *Revue Néoscholastique*, XXIX (1927), 338-339, attributes its presence to "une négligence de rédaction". The reasons in both cases are doctrinal.

The plural is used also at 7,1072^b1-2.

⁴² *Lambda* 2,1069^b14-26. Both matter for generation and matter for movement in space are excluded by Aristotle's reasoning. Movements are considered as "Beings" (though in a secondary sense) in the context of Book *Lambda* (1,1069^a21-22; cf. 5,1071^b5-7); so there is no difficulty in including potency for movement in space under the "potential Being" which is here denied to immobile substance.

Such is the reasoning of the Stagirite. The Mover so reached is something which is eternally acting, in a sense that requires its very substance to be the *acting*. There can be no element or aspect in it which is merely *able* to act. It can have no potency or matter. Only that kind of actual Being can account for the eternal motion of the Heavens.

Could a thought produced by a celestial soul have that type of actuality?

According to those who propose this interpretation, such a thought is reached by universalizing the notions of goodness, or Being, or act.⁴³ Now such a universal, at least on Aristotelian principles, is always something potential. Actual thought, as well as what it immediately attains, is always a "this" (τόδε τι),⁴⁴ something individual. For the same reason no universal could be substance in the context of the Primary Philosophy,⁴⁵ nor a cause of individual generation in Book *Lambda*.⁴⁶ The Platonic Ideas, which in this respect are equated with the universals,⁴⁷ are in consequence described as potential.⁴⁸ A universal, though hypostatized, remains in its nature something potential. Clearly, then, no standard or ideal formed on the basis of a universal has the type of actuality required by the Aristotelian argument.

But even though such a thought were reached by some other process which would allow it to be actual in the sense demanded by the Stagirite's reasoning, it would by that very actuality be immediately identified with the substance held to be producing it. It could not be a thought that is at all *able* to be produced by anything else, for it could not have potentiality in its nature. It would have to be a *thinking* of itself, and so would be substance in its own right, with no dependence whatsoever upon the celestial soul.

⁴³ E.g. B. A. G. Fuller, *Philosophical Review*, XVI (1907), 180; G. A. Lindbeck, *Review of Metaphysics*, I (1948), 105.

⁴⁴ M 10,1087^a15-24; cf. Z 10,1036^a6-8.

⁴⁵ Z 13,1038^b34-1039^a2.

⁴⁶ *Lambda* 6,1071^a19-24.

⁴⁷ *Lambda* 1,1069^a26-28; cf. H 1,1042^a15-16.

⁴⁸ *Lambda* 6,1071^b15-17; *Theta* 8,1050^b34-1051^a2.

Aristotle's reasoning, therefore, demands that the first cause of celestial motions be substance in its own right, and in no way dependent upon anything else for production or Being. In this sense is it separate from sensible things, even eternal sensible things. The Stagirite's principles, accordingly, fully justify his conclusion: "That there is then a substance eternal and immobile and separate from sensible things, is clear from what has been said."⁴⁹

III

A further question asked is whether this substance is unique or plural.⁵⁰

The Stagirite answers that the number of immobile Movers has to be equal to the number of original motions observable in the Heavens. Each motion which cannot be reduced to the motion of the first Heaven must have a distinct immobile Mover as its cause. A plurality of such distinct motions is observable to the astronomers. There is consequently a corresponding plurality of immobile Movers.⁵¹

Aristotle goes on to show that this number of the immobile Movers cannot be further multiplied through the supposition of many distinct universes, specifically the same but numerically different. The reason is that the *first* Mover cannot be multiplied, since it has no matter, and the movement which it causes is unbroken. There can accordingly be only the one universe, and so there can be only the one set of separate Movers.⁵²

This reasoning establishes a plurality of immobile Movers, distinguished as first and second according to the order of the celestial motions.⁵³ No other basis of distinction is provided by the argument.

⁴⁹ Lambda 7,1073*3-5.

⁵⁰ Lambda 8,1073*14-15.

⁵¹ Lambda 8,1073*22-1074*17.

⁵² Lambda 8,1074*17-38. Cf. P. Merlan, *Traditio*, IV (1946), 12-13.

⁵³ Lambda 8,1073*1-3.

What type of reality is to be accorded to each of these Movers?

In the first chapter of Book *Lambda*, sensible substance was looked upon as admitted by all. Plants and animals were mentioned as examples.⁵⁴ Sensible substance, accordingly, is evident and is evidently plural. That is a matter of immediate observation. Immobile substance, on the other hand, had to be demonstrated. Only its effects were observable. These indicated that there was immobile substance, and that, like sensible substance, it was plural. The plurality in each case follows upon observation, in the one case immediate, in the other case through demonstration from observable effects. In neither case is there any attempt to deduce unicity or plurality *a priori* from the nature of either sensible or immobile substance, and in neither case may the Greek use of the singular with the article⁵⁵ in introducing the theme be taken to preclude the supposition of plurality.

What type of *form* does this reasoning imply?

It is quite evidently a form which is "a this."⁵⁶ It is some-

⁵⁴ *Lambda* 1,1069^a30-32.

⁵⁵ *Lambda* 1,1069^a31; ^b3; 6,1071^b4. Similarly, the article with the singular "god" at 7,1072^b25-30 no more implies the existence of only one god than does the expression "the substance" at 1,1069^a18 imply only one substance, or "the wise man" at A 2,982^a7-18 mean that there is only one wise man.

⁵⁶ In *Lambda* (3,1070^a11-15; cf. W. D. Ross, *Aristotle's Metaphysics*, II, 356), the form, as contrasted with the matter, is "a this". Similarly at *Delta* 8,1017^b25; *H* 1,1042^a29; *Theta* 7,1049^a35. At *de An.* II 1,412^a8-9, the form is "that precisely in virtue of which a thing is called 'a this'" (Oxford trans.), which makes the form the source of individuality to the matter and the composite. In this way the form as such is individual without being a composite singular, and as individual is the cause of Being and the principle of knowability in the singular sensible thing.

In spite of some able but short and over-simplified discussions of the Aristotelian *τὸδε τί* in recent years (e.g. J. A. Smith, "TOΔΕ ΤΙ in Aristotle," *Classical Review*, XXXV, 1921, p. 19; A. Preiswerk, "Das Einzelne bei Platon und Aristoteles," *Philologus*, Suppl. XXXII, 1, 1939, pp. 84-87; H. Cherniss, *Aristotle's Criticism of Plato and the Academy*, Baltimore, Johns Hopkins Press, 1944, I, 340-355; A. M. de Vos, "La 'Vraie Substance' d'après la Métaphysique d'Aristote," *Library of the*

thing individual as such, though without being a singular of a species. Such a form is not reached by a process of universalization or abstraction. It is the individual form seen in each sensible thing. This form in sensible things is the actualization of a potency. It is of its very nature distinct from other forms — the form of a plant is different as form from the form of an animal. Only when the specifically same form is multiplied is a *per se* unintelligible⁵⁷ principle (i.e. matter) required, which can be added to the form without making any formal difference which would change the species.⁵⁸ An Aristotelian form, accordingly, is of its own nature individual and distinct from all other forms. It allows no further principle, such as matter, to account for this difference. Individual sensible motion, according to the Aristotelian analysis, requires individual act and potency in the mobile thing,⁵⁹ and everything which has matter is mobile.⁶⁰ But motion also requires, as its ultimate cause, a correspondingly individual act which has no potency, and so is individual form without matter, and entirely immobile.

Such a form is conceived, not as a universal, but after the manner of an individual sensible form, minus the relation to matter. Because it is actual, it cannot be a universal. Like the forms involved in sensible motion, it has to be individual and definite in its own nature. It is distinct as such from any other form. It is of itself a different nature. The universals and the Platonic Forms, on the contrary, are of the same nature as the singulars which share them. Platonic Forms are

Xth International Congress of Philosophy, I, 1905), the role of the form as "a this," with its far-reaching implications for the interpretation of Aristotelian philosophy, has not been made clear. That the text of *Lambda* looks upon the form (when contrasted with the matter) as "a this," must be allowed to suffice for the purposes of the present article.

⁵⁷ Z 10,1036^a8-9.

⁵⁸ Any addition or subtraction of an intelligible note changes the species; cf. H 3,1043^b32-1044^a11.

⁵⁹ *Lambda* 5,1071^a17-24.

⁶⁰ *Lambda* 2,1069^b24-25; 5,1071^a10-11.

only sensible natures plus the characteristic of "eternal."⁶¹ But an Aristotelian separate form, because it is not the form of a matter, is of a different *nature* from any sensible form, and because it is a *form* it is different from any other separate form.

The Aristotelian separate form, accordingly, is not reached by any process of abstraction. It is not something common. It is *ousia*, which no common attribute — not even Being and Unity — can ever be.⁶² It is therefore not the hypostatized concept of goodness or actuality. It is a definite act, an individual form. It is "a this" in its own right. There is no more reason why there cannot be many such forms than why there could not be many specifically different sensible forms. That there are in fact many such different sensible forms is a matter of direct observation. That there are many supersensible forms is a deduction from observable celestial motions.

The difficulty encountered in the question lies partly in the use of the one Aristotelian term *eidos* to denote both the individual *form* and the universal *species*. *Eidos* is an equivocal. It denotes something which is actually individual but potentially universal. This is one of the recognized Aristotelian types of equivocity — equivocity by act and potency.⁶³ And because the argument from motion requires that the ultimate Mover be actual, the meaning of *eidos* here can be only the actual, individual sense.

The reality of all the separate Movers, reached in this way, will be of the same level as that of the first. Each, it is true, is a different form. But there is no reason in the Aristotelian argument for placing the first of these Movers on any higher level of Being than the others. They are all forms

⁶¹ B 2,997^b5-12; cf. Z 16,1040^b32-34; M 9,1086^b7-13. The remarks of Cherniss (*op. cit.*, I, 211-213) on the difference between the Aristotelian and the Platonic conceptions of "eternal" do not affect this reasoning when based on the Stagirite's own principles.

⁶² Z 16,1040^b18-23.

⁶³ *Delta* 8,1017^b1-6; E 2,1026^b1-2; *Top.* I 15,106^b13-20; V 2,129^b33-34; S E, 4,166^a22-32; P A, II 3,649^b10-11.

without matter, distinct only by the fact of being different forms; and even this distinction is known to men only through the order of the heavenly motions.

Not only the first Mover but also each of the others, accordingly, has to be a substance existing in its own right and independently of being thought by another substance. The other separate Movers cannot be the thoughts of the first.

IV

A number of vexing queries at once arise in the mind of the present-day critic when confronted with this doctrine.

What relation, for example, have these separate Movers to one another?

Apparently they have none, except the negative one of being different. Each separate substance is fully self-sufficient in its own actuality.

Why does the first Heaven desire⁶⁴ only one Mover, the first, while other heavenly bodies desire several? How is each

⁶⁴ G. A. Lindbeck, *Review of Metaphysics*, I (1948), 102, maintains that "it cannot be literally true that the spheres desire God", since what they desire is their own functioning, to which a *separate* Mover can contribute nothing. Aristotle's reasoning is that such an *eternal* desire would be impossible if there were not also a final cause whose substance is actual (*Lambda* 7, 1072^a23-26) and therefore separate (1073^a4). In this context the two elements in final causality are distinguished (1072^b1-3). That which is desired (namely, the highest actuality) is in the separate Beings (*ibid.*). That for which it is desired (namely, the spheres themselves, whose perfection consists in their eternal activity — the imitation of that separate good) is in the things that are moved, and not in the immobile substances. The separate good can be *obtained* only by imitation. But the good itself, not just the imitation alone, is *desired*, and is obtained to a degree in the imitation.

On a corresponding desire in sensible things for the divine, and their obtaining it in still lesser degrees, cf. *G C*, II 10, 336^a27-337^a7; *de An.* II 4, 415^a26-27. From this viewpoint at least, Aristotle's thought is continuous with the Greek tradition from Thales on. It places the divine as the basis of things and makes it pervade them all (cf. W. Jaeger, "The Pre-Socratic Philosophers as Founders of Philosophical Theology," *Library of the Xth International Congress of Philosophy*, I, 1070-1071).

Mover known by the respective sphere-souls? No answer is to be found in the extant text of the Stagirite. Does each heavenly body, like man, possess a passive mind which somehow is illumined by a corresponding Mind which is in act (i.e., a separate Mover)?

The texts give hardly enough data to deduce Aristotle's answer to these questions. The only passage on the relation of separate to passive mind is the short and difficult fifth chapter in the third Book of *De Anima*.⁶⁵ There the question concerns only the human passive mind, which is perishable. A corresponding passive mind in the sphere-souls would have to be eternal. But allowing for this difference, why could there not be such a mind related in a similar way as potency to its proper immobile Mover or Movers? The immobile Movers of Book *Lambda* are described in the same terms as the immortal Mind in the *De Anima*. In both places the nature is that of Mind, and is unchangeable and eternal, and entirely actual in its substance and separate.⁶⁶ Just as the immortal Mind in the case of man, even though separate, is described by Aristotle as a "part" of the soul,⁶⁷ or as "something" of the soul,⁶⁸ so in the same sense the separate Movers could be considered as "parts" of the heavenly souls. In this way the distinction between the Movers of the *Physics* and those of Book *Lambda* would not be so drastic from the Aristotelian viewpoint. The Stagirite, accordingly, would be in no hurry to give a definite answer to the problem of the identity or difference of the Movers in the two treatises. That question on the ground of the Aristotelian principles is much too complicated to be

⁶⁵ *De An.* III 5,430^a10-25.

⁶⁶ *Lambda* 7,1072^b23-1073^a5; *de An.* III 5,430^a17-23. The use of the aorist passive participle to express "separate" at *De An.* III 5,430^a22 does not necessarily imply any previous closer union with a soul than does the perfect passive participle at *Lambda* 7,1073^a4; cf. G. Verbeke, "Comment Aristote conçoit-il l'immatériel," *Revue Philosophique de Louvain*, XLIV (1946), 227-228.

⁶⁷ *De An.* III 4,429^a10; cf. H. Bonitz, *Index Aristotelicus*, 419^b8-15.

⁶⁸ *Lambda* 3,1070^a26; cf. Bonitz, *loc. cit.*, ^b11-12; W. D. Ross, *Aristotle's Metaphysics*, II, 357.

answered by a simple "yes" or "no." The main series of the metaphysical treatises, which seem to lead up to the nature of Primary Being and the way in which that nature is the cause of Being to everything else, could be expected to attack the problem. But this final part of the Primary Philosophy has not come down to posterity, nor is there any record that it was ever written by the Stagirite.

Accordingly, all these considerations about the relations of the Aristotelian separate Minds to souls, whether human or celestial, must remain highly controversial. They serve, however, as a guard against over-simplifying the Aristotelian problem through the use of later categories. It is difficult for the modern student, in the wake of so many centuries of Jewish, Christian, and Moslem thought, to keep from approaching the separate substances in terms of God, angels, and immortal human souls. These form three different levels of Being. But in Aristotle the level seems exactly the same. It is that of Mind, which is separate and actual, form without matter. On this one level all the problems of the relations of sensible Beings to the supersensible have to be solved.

V

With regard to the immediate problem, however, the answer is clear enough. The Aristotelian argument requires a plurality of substantial Movers, each of which is actual and separate, in the sense of depending on no prior substance for its Being. None of these Movers can have the status of a mere standard or ideal which is produced in the thought of a celestial soul, or in a Mind different in any way from the very thinking of that thought.

The difficulties brought against this doctrine seem to arise from two sources. Either an Aristotelian separate substance is expected to conform to the notion of the Christian God, and when it is found lacking in the efficiency and unicity and infinity of Being which go with that notion, it is denied all reality; or else the separate substance is conceived as an hypostatized

universal, the universal of act or goodness or Being, which requires no reality and admits no multiplicity.

But if Aristotle's reasoning is followed in its own context, it leads to the acceptance of really and independently existent separate substances. The argument is firmly based upon observed sensible movement. The Stagirite's analysis of that movement may have been sadly incomplete, both from the metaphysical⁶⁹ and the physical viewpoints, as later centuries of investigation have shown. But if the observational process and metaphysical analysis be frozen at the point which they had reached with Aristotle, and the philosophical reasoning be built upon the data so acquired, the argument seems flawless. The sensible motion so observed and analysed has inevitably to be caused by a plurality of independently existent, actual, living separate substances.

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⁶⁹ The Aristotelian analysis of sensible things fails to isolate any existential act. Cf. E. Gilson, *Being and Some Philosophers* (Pont. Inst. of Medieval Studies: Toronto, 1949), pp. 45-47; and, on the corresponding defect in the Aristotelian conception of efficient causality, *L'Être et l'Essence* (Paris: Vrin, 1948), pp. 59-62. The motion of sensible things which are understood in this way can evidently have no temporal origin, because it would have to originate through another *motion*, thereupon giving rise to a preceding time, and so *ad infinitum*.



BEING, ESSENCE AND EXISTENCE FOR ST. THOMAS AQUINAS

BEING AND ITS INTELLIGIBILITY

The human intellect is a power proper to rational nature. As a power of a certain nature it is founded in Nature and has a necessary determination to one object. That is, there is an object that it knows in virtue of its very nature, in virtue of *what it is*. This object is being (*ens*). "Since nature is always determined to one object (*ordinetur ad unum*), it follows that of one power there is naturally one object... For this reason the intellect, inasmuch as it is one power, has one natural object, of which it has knowledge immediately and naturally. This object must be that under which are comprised all things known by the intellect... This is nothing else than being. Therefore, our intellect knows being naturally, and all things that immediately pertain to being as such. On this knowledge is based our understanding of first principles, such as *the incompatibility of simultaneous affirmation and negation*, and the like. Consequently these principles alone are known naturally by our intellect, while conclusions are known through them."¹

The operation of the human intellect is twofold, however: first, simple perception, 'simple apprehension,' the 'simple gaze of indivisibles' and second, composition and division or judgment. In considering the principles of human knowledge it is therefore necessary to distinguish simple principles from complex principles or axioms. It is evident, however, that being is absolutely first of all complex as well as incomplex principles. "That which first falls under apprehension is being, the understanding of which is included in all things whatsoever man apprehends. Therefore, the first indemonstrable principle is *the same cannot be affirmed and denied at the same time*, which

¹ *Cont. Gent.* II. 83.

is based on the constitutive intelligibility of being and non-being: and on this principle all others are based."²

Being does not come first in the sense that what comes next no longer is being. Being comes first and remains. It accompanies all our knowledge. All our subsequent knowledge must come by enlarging our knowledge of being. All other conceptions are variants or determinations of this primary one. "Thus being is totally and absolutely prior to the others. The reason for this is that being is included in the understanding of the others, and not conversely. For that which first falls under the apprehension of the intellect is being, and without this understanding nothing can be grasped by the intellect; just as the first to fall under the acceptance of the intellect are axioms, and principally that *contradictories cannot be true simultaneously*. Thus all other conceptions are included in a certain way in being unitedly and indistinctly."³

² *Sum. Theol.* Ia IIae. 94. 2. *Resp.* Cf. *In IV Metaph.* 17, n. 736... "for all principles are based on this principle, namely that affirmation and negation are not simultaneously true, and that there is no middle ground between the true and the false... these principles follows from the intelligible constitution of being."

³ *In 1 Sent.*, d. 8, q. 1, a. 3, *Sol.* Cf. *In IV Metaph.* 6, n. 605... "since the operation of the intellect is twofold; one by which it knows *what something is* (*quod quid est*), which is called the simple gaze of indivisibles: another by which it composes and divides. In both operations there is something first: in the first operation there is something first, which falls under the conception of the intellect, namely that which I call being; and there is not anything that can be conceived by the mind in this operation, unless being is grasped. And since this principle, *to be and not to be at the same time is impossible*, depends on the understanding of being, just as this principle, *every whole is greater than its part*, depends on the understanding of whole and part: so also this principle is naturally first in the second operation of the intellect, that, namely, of the intellect composing and dividing. And no one can know anything by this second operation, unless this principle is known. For just as whole and parts are not known unless being is understood, so also the principle, *every whole is greater than its part*, is not known, unless the most firm principle mentioned above is understood." *In XI Metaph.* 5, n. 2211... "this principle is *to be and not to be at the same time is not possible*. This principle is the first for the following reason, namely, its terms are being and non-being, which first fall under the consideration of the intellect." *On Truth*, XXI. 1. *Resp.* "... there is no thing

In every man there is a natural light "through which certain universal principles of all the sciences are naturally understood as soon as proposed to the intellect."⁴ Man does not have certitude concerning a conclusion, however, unless it is understood as a conclusion, that is, in so far as it follows from its premises; which premises in their turn must be understood to arise from and be rooted in being. "It is not possible to judge rightly concerning conclusions unless they are resolved into indemonstrable principles."⁵ There are certain first conceptions natural to the human intellect, whether these are incomplex, such as the intelligible value of being, or complex, such as axioms. Conclusions that follow necessarily from these self-evident principles must be held as certain while anything that is contrary must be rejected entirely. Anything that is not included in these self-evident principles (or whose inclusion is not manifest) does not cause science but perhaps

of nature (*res naturæ*) that is outside the essence of universal being ... being is that which falls under the conception of the mind." *On Truth* I. 1. *Resp.* "...that which the intellect first conceives, as what is best known, and to which it reduces all its conceptions is being... Whence it is necessary that all other conceptions of the intellect be obtained by adding to being." *Sum. Theol.* Ia IIae. 55. 4. ad 1. "That which first falls in the intellect is being, wherefore everything that we apprehend we consider as being." *Sum. Theol.* IIa IIae. 1.7. *Resp.* "...all principles are reduced, as to their first principle, to this one: *The same cannot be affirmed and denied at the same time.*" *On The Power of God* IX, 7, ad 15... "That which first falls in the intellect is being, and second is the negation of being... [to the arguments on the other side]... Since being is the first object which is conceived by the intellect, it follows necessarily that whatever the intellect conceives, it understands as being." *Sum. Theol.* I. 11. 2. ad 4... "from the very negation of being: so what first comes to the intellect is being, secondly, that this being is not that being." *In I Sent.*, d. 24. q. 1. a. 3, ad 2... "That which first falls under the grasp of the intellect is being and non-being." *On Truth* XXI. 4. ad 4... "that which first falls under the apprehension of the intellect, is being; for which reason it is necessary for the intellect to attribute being to all things apprehended by the intellect."

⁴ *Sum. Theol.* I. 117. 1. *Resp.*

⁵ *In IV Sent.*, d. 9, a. 4, *Solutio* 1.

opinion or belief.⁶ The intellect may assent to it or not. Thus "the whole certitude of science arises from the certitude of principles. Conclusions are known with certainty when they are resolved into their principles."⁷ The intellect immediately grasps those self-evident principles and mediately demonstrated conclusions. "Man acquires knowledge of the unknown through these two, namely the intellectual light and the first self-evident conceptions which are compared to that light... as tools to an artisan."⁸

The human intellect thus understands first principles naturally.⁹ There are some things which are apprehended which do not convince the intellect to such an extent that they do not leave it free to assent or dissent (or at least to suspend its assent or dissent because of some reason or other). On the other hand, however, "if that which the intellect apprehends is such that it *naturally* assents thereto, e.g., first principles, it is not in our power to assent to it or to dissent. For in such cases, assent is founded in Nature (*in ordine naturae*), and consequently, properly speaking is not subject to our command."¹⁰ Whenever there is intellectual assent there is always something that inclines the intellect to assent. Assent to self-evident first principles is founded in Nature; it is the *naturally* possessed light of the intellect that inclines it to assent. The truth of those first principles, moreover, causes assent to conclusions derived from them. Such assent is not voluntary but necessary. It is compelled.¹¹

In the case of the act of faith, on the other hand, what inclines the believer to assent is that light which is the habit

⁶ St. Thomas had the classical conception of science, that is, knowledge through necessary reasons.

⁷ *On Truth* XI. 1. ad 13.

⁸ *On Truth* XI. 3. *Resp.*

⁹ Cf. *Comp. Theol.* C. 43... "our intellect naturally understands first principles."

¹⁰ *Sum. Theol.* Ia IIae. 17. 6. *Resp.*

¹¹ Cf. *On the Trinity* II. 1. ad 5. "Demonstrative reasoning compels the intellect to assent."

of faith divinely infused into the human mind. "The habit of faith . . . does not bring it about that believers see those things that are believed, nor does it force assent, but it causes them to assent voluntarily."¹² The act of faith is the act of assenting to revealed truth, not because the mind sees what is believed but because God has revealed (said) it. It is itself a kind of knowledge but nonetheless it is opposed to knowledge by vision and to science properly so-called. It is an act of the intellect and the assent of the one who has faith is unshakeable. It derives infallible certitude from the fact that it is founded wholly on the testimony of God. The assent, therefore, requires the determinative action of the will (moved by grace). The object itself is not evident. We have just seen that when that which the intellect apprehends (e.g., first principles) is such that the mind naturally assents thereto it is not in the knower's power to assent or dissent. If one has that sort of evident knowledge, it is obvious that one does not believe what is proposed: one sees it. That is what St. Thomas means when he says that knowledge by science and knowledge by faith cannot be in the same subject and about the same object. It is intrinsically impossible to believe and see the same object at the same time and under the same respect.¹³

¹² *On The Trinity* III. 1. ad 4.

¹³ Cf. *Sum. Theol.* IIa IIae. 1. 4. *Resp.* and 1.5. *Resp.* . . . "Faith implies assent of the intellect to that which is believed. Now the intellect assents to a thing in two ways. First, through being moved to assent by the object itself, which is known immediately (as in the case of first principles, of which there is understanding), or through something else already known (as in the case of conclusions, of which there is science). Secondly, the intellect assents to something, not through being sufficiently moved to this assent by its proper object, but through an act of choice, whereby it turns voluntarily to one side rather than to the other. If this is accompanied by doubt and fear of the opposite side, there will be opinion; while if there be certainty and no such fear, there will be faith. Now those things are said to be seen which immediately move our intellect . . . to knowledge of them. Wherefore it is evident that neither faith nor opinion can be of things seen by . . . the intellect . . . All science is derived from self-evident and, therefore, seen principles. For this reason it is necessary that all

There is no error, therefore, in the understanding of first principles. These are known by simple intuition (*simplici intuitu*).¹⁴ No error is possible concerning them. The intellect cannot but assent to these first principles, which are

objects of science be seen in some way. But, as stated above, it is impossible that one and the same thing should be believed and seen by the same subject. Hence it is also impossible for one and the same thing to be an object of science and of belief for the same subject." *Sum. Theol.* I. 12.13. ad 3... "faith is a kind of knowledge, inasmuch as the intellect is determined by faith to some knowable object. But this determination to one object (*determinatio ad unum*) does not proceed from the vision of the believer, but from the vision of Him Who is believed. Thus, as far as faith falls short of vision, it falls short of the nature knowledge has when it is science; for science determines the intellect to one object by the vision and understanding of first principles." *Sum. Theol.* I. 111. 1. *Resp.*... "the intellect assents to the truth of faith, not as convinced by reason, but as commanded by the will." *Sum. Theol.* IIa IIae. 67. 3. *Resp.*... "it belongs to the nature of opinion that we accept one of two opposite assertions with fear of the other, so that our adhesion is not firm; it belongs to the nature of science to have firm adhesion with intellectual vision, for science possesses certitude which results from the understanding of principles. Faith holds a middle place; for it surpasses opinion in so far as its adhesion is firm, but falls short of science in so far as it lacks vision... The believer does not see what he believes." *Sum. Theol.* IIa IIae. 2. 1. *Resp.*... "This act, to believe, cleaves firmly to one side, in which respect belief has something in common with science and understanding, yet the believer's knowledge does not attain the perfection of manifest vision." *Cont. Gent.* III. 40... "the intellect assents by faith to things proposed to it, because it so wills, and not through being constrained by the evidence of their truth."

¹⁴ Cf. *Sum. Theol.* IIa IIae. 180. 6. ad 2... "in this operation of the soul there is no error, even as there is clearly no error in the understanding of first principles, which we know by simple intuition." *Cont. Gent.* I. 61... "the intellect does not err about first principles." *Cont. Gent.* III. 46... "Moreover. Knowledge that results from something implanted in us by nature, is itself natural: for instance, the indemonstrable principles... But no one can err in things that we know naturally, for no one errs in the knowledge of indemonstrable principles." *Cont. Gent.* I. 57... "Again. Those things which we know naturally, are known to us without ratiocination." *Sum. Theol.* I. 85. 6. *Resp.* "That is why it is also true that the intellect cannot err in regard to those propositions which are understood as soon as the meaning of the terms is understood. Such is the case with first principles, from which there also arises infallibility of truth in the certitude of science with respect to its conclusions."

known naturally.¹⁵ Once the intelligible value of subject and predicate is grasped certain knowledge of them is assured. Moreover, they are known to all men. "A proposition is self-evident because the predicate is included in the constitutive intelligibility of the subject . . . If, therefore, the definition of the predicate and subject is known to all, the proposition will be self-evident to all. This is clearly the case with the first principles of demonstration, the terms of which are certain common notions of which no one is ignorant, such as being and non-being, whole and part, and the like."¹⁶ For this reason the understanding of first principles is called a natural habit. It is founded in Nature; it belongs to the intellectual soul in virtue of its very nature, in virtue of *what it is*.¹⁷

As soon as a man knows what a whole is and what a

¹⁵ Cf. *Sum. Theol.* I. 62. 8. ad 2 . . . "the intellect cannot but assent to naturally known first principles."

¹⁶ *Sum. Theol.* I. 2. 1. *Resp.* For St. Thomas, following Aristotle, there are two ways in which a predicate can be attributed necessarily, or *per se*, to a subject. In the first way, the predicate forms part of the essence of the subject; for example, "the whole is greater than any of its parts." In the second way, the subject is necessarily implied, as proper or distinctive subject, in the notion of the predicate; for example, "whole numbers are even or odd." Cf. *In I Post, Anal. Cap.* IV, lect. 10, n. 4. . . "we have the second way of necessary (*per se*) predication when the subject is implied in the definition of the predicate, which is a proper accident (*proprium accidens*) of the subject." For Aristotle see *loc. cit.* 73 a. Cf. note 31, *infra*. In *Sum. Theol.* I. 44. 1. ad 1. we have two examples of the second mode of necessary, or *per se*, predication; "Such a being [a being by participation] cannot be without being caused, just as a man cannot be without having the faculty of laughing."

¹⁷ Cf. *Sum. Theol.* Ia IIae. 51. 1. *Resp.* . . . "the understanding of first principles is called a natural habit." *On Truth* XIV, 1, *Resp.* . . . "and thus in virtue of *what it is* the intellect is determined immediately to propositions of this kind." *On Truth* XV, 1, *Resp.* . . . "the acceptance of a truth of this kind is in man through a certain natural habit." *On Truth* XVI, 1, *Resp.* . . . "in the human soul there is a certain natural habit whereby the principles of speculative sciences are known and which we call the understanding of principles." *On The Trinity* VI, 4, *Resp.* . . . he has a natural knowledge of these principles." VIII *Quodl.* 4. *Resp.* . . . "in the intellect we have naturally certain conceptions known to all men, such as the concept of being."

part is, he knows at once that every whole is greater than its part. As soon as he grasps the constitutive intelligibility of being and non-being, he knows at once that the so-called 'principle of contradiction' is true. For the truth and knowledge of indemonstrable principles depends on the intelligible value of their terms. The intelligible value of being and non-being, of whole and of part cannot be grasped, however, except through the intelligibles which the intellect itself abstracts from sensible data.¹⁸

Man as a knower is a composite *subject* and to speak strictly we should not say that the intellect knows nor that the senses know, but that, through these powers, man knows.¹⁹

¹⁸ Cf. *Sum. Theol.* Ia IIae. 66.5. ad 4. "The truth and knowledge of indemonstrable principles depends on the constitutive intelligibility of their terms: for as soon as we know what is a whole, and what is a part, we know at once that every whole is greater than its part. Moreover to know the intelligible value of being and non-being, of whole and of part, and of other things consequent to being, which are the terms whereof indemonstrable principles are constituted, is the function of wisdom." *Sum. Theol.* Ia IIae. 51.1. *Resp.* . . . "from the very nature of the intellectual soul, it belongs to man that, having grasped what is a whole and what is a part, he knows at once that every whole is greater than its part; and in like manner with regard to other such principles. Yet he cannot know what is a whole and what is a part except through the intelligible species received from the phantasms."

¹⁹ Cf. *Sum. Theol.* I. 75. 2. ad 2 . . . "we may say that the soul knows . . . but it is more correct to say that man understands through the soul." *On Truth* II. 6. ad 3 . . . "properly speaking, neither the sense nor the intellect knows, but man knows by means of both." *On Spiritual Creatures* II. ad 2 . . . "to understand is an operation of the human soul, inasmuch as the soul goes beyond its relation to corporeal matter and consequently understanding does not come about through any corporeal organ. Yet we may say that the composite itself (that is, man) understands, inasmuch as the soul, which is its formal part, has this proper operation, just as the operation of any part is attributed to the whole; for a man sees with his eye, walks with his feet, and in like fashion understands through his soul." *On Spiritual Creatures* X. ad 15. "Now it must not be said that the active intellect understands in isolation (*seorsum*) from the possible intellect, but that man understands by means of both; it is he who has knowledge in particular, through the sense powers, of those things which are abstracted by means of the active intellect." Also VII *Quodl.* a. 11, ad 3, *In I de An.* lect. 10, n. 152.

The human *subject* communicates with external reality initially by means of his senses which attain the thing itself existing outside of him. Every operation of the sensitive soul belongs to the composite. The composite is acted upon by those material objects. In so far as it animates the body the human soul is on the same level as external material forms and can enter into society with them. "It is connatural to us to know those things that do not have existence except in individual matter, since our soul, through which we know, is the form of some particular matter."²⁰

In sense perception the knower has not attained the thing in its intimate nature, however, but only in its action on him. Through his senses man receives the materials upon which the intellect acts in order to abstract therefrom its concepts. Concepts are drawn actively from the sense data by the mind and these concepts are the means whereby the knower can know *what things are*. The philosopher attempts to perceive those features of the natures of things which are above the purely sensible plane. His intellect by its own strength disengages from sense experience those intelligible objects, those intelligibles, those essences. "The name *intellectus* (intellect) implies an intimate knowledge; for we say *intelligere* (to understand) as if *intus legere* (to read within). This is clear to anyone who considers the difference between intellect and sense, for sensitive knowledge is concerned with external sensible qualities, whereas intellectual knowledge penetrates to the essence of the thing."²¹ The human intellect has thus a proper, i.e., a scientific, knowledge of things; "although the human intellect does not know singulars as such, it does have

²⁰ *Sum. Theol.* I. 12. 4. *Resp.* Cf. *Sum. Theol.* I. 75. 3. *Resp.*... "To sense and the consequent operations of the sensitive soul are evidently accompanied with some bodily change... the sensitive soul has no immediate operation of its own... every operation of the sensitive soul belongs to the composite."

²¹ *Sum. Theol.* IIa IIae, 8, 1. *Resp.* Cf. *In VI Eth.* 5, n. 1179... "the intellect (*intellectus*) is so-named from the fact that it reads within (*intus legit*) in perceiving the essence of the thing."

a proper knowledge of things, since it knows them through their essences."²²

Through his senses the knower receives from without as it were the matter of his knowledge; those sensible impressions which are constantly radiated by the objects on his sense organs. Those sensible data are not the cause of his knowledge but the matter upon which his mind is going to act in order to draw therefrom its concepts: "it cannot be said that sensible knowledge is the total and perfect cause of intellectual knowledge, but rather is in a way the matter of the cause."²³

The human intellect both abstracts the intelligible species from phantasms, inasmuch as it considers the natures of things in their universality, and also understands these natures in the phantasms, since it cannot understand the things, of which it abstracts the species, without turning to phantasms. "For the intellect to understand actually its proper object, it must of necessity turn to the phantasms in order to perceive the universal nature existing in the individual."²⁴ This is the natural orientation of the human intellect in this life which results from "the perfection of the conjunction of soul to body."²⁵ The phantasm is, therefore, not a passing but a

²² *On Truth*, II, 4, ad 1. Cf. *Sum. Theol.* I. 85. 2. *Resp.* . . . "the intelligible species is related to the intellect as that by which it understands . . . through the intelligible species the soul knows things which are outside the soul."

²³ *Sum. Theol.* I. 84. 6. *Resp.* Cf. *Sum. Theol.* I. 12. 4. *Resp.* . . . "it is connatural for us to know, through the intellect, natures which do not have existence except in individual matter; not indeed as they are in such individual matter, but according as they are abstracted therefrom by the consideration of the intellect." *Sum. Theol.* I. 85. ad 1. . . . "This is to abstract the universal from the particular or the intelligible species from the phantasm, namely to consider the nature of the species without considering the individual principles which are represented by the phantasms." *Sum. Theol.* I. 85. 1. ad 4. . . . "inasmuch as by its power we are able to take into our consideration the natures of the species."

²⁴ *Sum. Theol.* I. 84. 7. *Resp.* and q. 85. 1, ad 5.

²⁵ *In IV Sent.*, d. 50, q. 1, a. 2. *Sol.*

permanent principle of human knowledge.²⁶ We need our senses not only to draw from thence our concepts of things but also for the ultimate resolution of the judgment "for this is perfected by turning to sensible objects, which are the first principles of human cognition."²⁷ Thus we shall not abandon our contact with the sensibly existent. We must know how things exist. "It is not possible to have a perfect judgment about any conception except through resolution to the principle whence that conception has its origin... Since all our intellect's knowledge has its origin in the senses, there cannot be a perfect (*rectum*) judgment unless it be reduced back to the senses. That is why Aristotle says that just as indemonstrable principles, which are understood, are the extremes of resolution, so also are the singulars, which are sensed."²⁸

²⁶ Cf. *On The Trinity* VI, 2, ad 5... "the phantasm is the principle of our knowledge, as that from which the operation of the intellect has its origin, not as a passing principle but as a permanent principle, and, as it were, the foundation of intellectual operation... since the phantasms are related to the intellect as its objects, in which it inspects all that it does inspect either according to perfect representation or by way of negation."

²⁷ *Sum. Theol.* IIa IIae, 154.5, ad 3.

²⁸ *In IV Sent.*, d. 9, q.1, a.4, Sol. 1. Cf. *Sum. Theol.* I, 84, 8, Resp... "a perfect judgement concerning anything cannot be formed unless all that pertains to that thing be known; especially if that be ignored which is term and end of judgement... the natural philosopher does not seek to know the nature of a stone and of a horse, save for the purpose of knowing the intelligible values of those things which he perceives with his senses... there cannot be a perfect judgement of natural things in the philosophy of nature unless sensible things are known. But in the present state of life whatever we understand we know by comparison with natural sensible things. Consequently it is impossible for us to have a perfect judgement while the senses, through which we know sensible things, are suspended." *On Truth* XII, 3, ad 1, 2 and 3... "in cognition two things must be considered, namely the reception and judgement of that which is received... the judgement does not depend simply on this reception of the species, but also on this fact that those things concerning which we judge are analyzed (*examinantur*) in terms of some principles of cognition, just as in judging conclusions we resolve them in terms of first principles... But since the first principle of our knowledge is the sense, it is necessary that all things, concerning which we judge, be resolved in some way in the senses. For this reason Aristotle says that the complement of art

Thus the whole cycle of operations which begins in sensible intuition ends in sensible intuition. Strictly speaking being is neither intuited by a sensibility nor understood by an intellect; it is known by a composite *subject*, i.e., by man the knower who intuits being through his senses and conceives being through his intellect. "The first object of our intellect, in this state of life is not every being and everything true, but being and true considered in material things."²⁹ When St. Thomas repeats, with Avicenna, that being is what first falls under the apprehension of the mind, he does not mean that this cognition is an abstract cognition. Thomists generally use Cajetan's well-known term to express the starting point of knowledge: 'being concentered in the quiddity of sensible things' (*ens concretum quidditati sensibili*). It is being enveloped in the diverse natures perceived by the senses.

and of nature according to which we must judge concerning other things is the visibly sensible thing (*res sensibilis visibilis*), that just as the understanding of principles so too the senses are extremes, meaning by extremes that in which the subject judging makes his resolution... the judgement of the intellect needs the senses as the extreme and ultimate principle in which resolution is made." *On Truth* XXVIII. 3. ad 6. "...two operations belong to the intellect; to perceive and to judge concerning perception. But there cannot be a perfect judgement of the intellect during sleep, since the senses are then suspended and the senses are the first principle of our cognition. For a judgment is effected through resolution in principles, for which reason we must judge concerning all things according to that which is received from the senses, as Aristotle says."

Note *In III Sent.*, d. 18, q. 2, a.3, ad 2. "...the intellect can be considered from two points of view, either in so far as it is a certain power... or it can be considered as *this power rooted in the essence of the soul*. And since the soul is form of the body according to its very essence..."

Re Aristotle, Cf. *Ethics* VI, 8 (1142a especially 25 ff.). St. Thomas comments on this in lecture 7, n. 1214.

Also Cf. *De Caelo*, III, 7 (306a16).

²⁹ *Sum. Theol.* I. 87. 3. ad 1. Cf. *Sum. Theol.* I. 84. 7. *Resp.* "...the proper object of the human intellect, which is united to a body, is the quiddity or nature existing in corporal matter." *Sum. Theol.* I. 85. 8. *Resp.* "...that which is known first and immediately (i.e., of itself) by our cognitive power is its proper object."

Metaphysics does not intend simply to explain appearances, however. True, Metaphysics takes sense experience as its starting point but it does not remain on the empirical plane. "There are certain objects of the speculative intellect (*speculabilia*) that do not depend on matter for existence, because they can exist without matter. Either they never exist in matter, for example, God and angels, or they are existing in matter in some things and not existing in matter in other things, for example . . . being . . . and others of this kind. Theology [i.e., Natural Theology] or Divine Science deals with all these objects since the principal object among those known by this science is God. By another name it is called Metaphysics, that is after and beyond Physics, since it happens that we learn this science after Physics, and we must come to non-sensible objects through those which are sensible. It is also called First Philosophy, inasmuch as all other sciences, receiving their principles from it, follow upon it."³⁰ The metaphysician knows that his task is to search for the ultimate foundation of the intelligibility of things. For he seeks to discover the ontological structure of things and the hierarchy of essences in terms of intelligible being. He finds that ultimate foundation in the pure Act and understands that in the final analysis "it must be said that everything, that in any way is, is from God . . . all things other than God are not their own existence, but participate existence. Therefore, it must be that all things which are diversified by the diverse participation of the act of existing, so as to be more or less perfect, are caused by one first Being, Who is most perfectly . . . For, from the fact that something is being by participation, it follows that it is caused by another. Hence such a being cannot be without being caused . . . But since to be caused does not enter into the intelligible value of being taken absolutely, that is why

³⁰ *On The Trinity* V, 1, *Resp. Cf. Sum. Theol.* I, 85. 1. ad 2. . . "there are some things that can be abstracted even from common intelligible matter, such as being . . . and others of this kind, which are able to exist without any matter."

there exists a being that is uncaused."³¹ Divine things are dealt with by philosophers in so far as they are the principles of all things and hence fall under the purview of that science (namely, Metaphysics) which studies things common to all beings and whose proper object is being as being. The object of Natural Theology or Metaphysics is God as the first cause of creatures and the Author of the natural order.³²

Metaphysics studies being envisaged in itself and in accordance with its own mode of intelligibility. Being is said to be separate from matter and motion, because it does not have any intrinsic dependence on matter and motion in the order of existence. Metaphysics deals with those things that are separate in this way as its own proper subject-matter. It deals with those things that are separate, in the sense that it belongs to their very constitutive intelligibility that they can in no way exist in matter and motion (God and angels), as the principles of its subject matter.³³

³¹ *Sum. Theol.* I. 44. 1. *Resp.* and ad 1. Cf. *Sum. Theol.* I. 7. 2. ad 1. "...it is against the intelligible constitution of a produced thing to be absolutely infinite."

³² *On The Trinity* V. 4. *Resp.* ... "Wherefore divine things are not dealt with by philosophers except in so far as they are the principles of all things; and hence they are considered in that science, in which things common to all beings are treated, which has as its subject being inasmuch as it is being (*ens inquantum est ens*), and this science is termed Divine Science among philosophers... divine things are considered not so much as the subject of the science, but as the principles of the subject, and of this kind is that theology which the philosophers sought, which according to another name is called Metaphysics."

³³ Cf. *Ibid.* "According to one mode in such wise that it is of the constitutive intelligibility of the thing itself, which is said to be separate, that it cannot exist in matter and motion in any way, as God and angels are said to be separate from matter and motion. In another way in such wise that it does not belong to its constitutive intelligibility that it be in matter and motion, but it can exist apart from matter and motion, though it may be in matter and motion sometimes. And thus being and substance and potency and act are separate from matter and motion, because they do not depend on matter and motion for existence (*secundum esse*)... Philosophical Theology deals with those things that are separate in this second way as with its subject-matter, whereas it deals with those that are separate in the first way as with principles of its subject-matter."

A man becomes a metaphysician when his intellect frees being from its material trappings, when he disengages it from its matrix. "Judgment of divine things is not formed according to the imagination. Therefore although the imagination is necessary for any consideration of divine things according to our status as wayfarer, yet it is never necessary to effect verification in the imagination in the case of divine things."³⁴ The principle or beginning of knowledge is the apprehension but the term belongs to the judgment which is the perfection of knowledge. For it is the act of existing which establishes and founds the intelligible structures of reality. That act in virtue of which all things exist is the very object of every achieved act of the intellect, that is, of judgment. We have considered the fact that the intellect is able to see into the very nature or essence of things. Intellection, however, is consummated only in the judgment which restores essences to the world of existence or to the world of *subjects*. In its first operation the intellect grasps natures or essences which are in existent things but it strips them of their actual existence in immaterializing them.³⁵ Judgment affirms existence. The first

³⁴ On *The Trinity* VI. 2. ad 5.

³⁵ Cf. *Cont. Gent.* I. 59. "...since the truth of the intellect is the equation of intellect and thing, in so far as the intellect asserts that to be which is and that not to be which is not, truth in the intellect belongs to that which the intellect says, not to the operation whereby it says it. For the truth of the intellect does not require that the act itself of understanding be equated to the thing, since sometimes the thing is material whereas the act of understanding is immaterial. But that which the intellect in understanding asserts and knows, needs to be equated to the thing, namely to be in reality as the intellect asserts it to be." *Sum. Theol.* I. 14. 13. ad 2. "...the existence of a thing in itself is other than the existence of a thing in the soul. For example, when I say, *What the soul understands is immaterial*, the meaning is that it is immaterial as it is in the intellect, not as it is in itself." In *VI Eth. Nic.* 7, n. 1211. "...the order of learning ... Fifth moreover (young men are to be instructed) in metaphysical (*in sapientialibus*) and divine truths which transcend the imagination and require a robust intellect." On this last point see *Cont. Gent.* I. 4. "...for which reason Metaphysics, which is about divine things, is the last of the parts of philosophy to be studied." *Cont. Gent.* III. 48. "...for hardly is man able to arrive at perfection in speculation concerning sciences, even

operation is, therefore, for the sake of the second wherein knowledge is perfected. Thus the intellect reaches existence itself through its own act. We have seen that Metaphysics is a purely natural wisdom developed in terms of natural and rational evidence. The simple assent to the evidence of a rational proposition is irreducibly distinguished from the act of faith in the Word of God. So too is Metaphysics irreducibly distinguished from Physical Science. For its certainties are based on the pure intelligibility of being itself without intrinsic reference to any construction of the imagination or to any experience of sense.³⁶

though he reach the last stage of life, and then, in the majority of cases, but a short space of life remains to him."

³⁶ Cf. *On The Trinity* V. 3. *Responsio* ... "The first operation regards the nature itself of the thing ... The second operation looks to the very existence ... For since anything is intelligible inasmuch as it is in act." *On The Trinity* VI. 2. *Responsio* ... "in any cognition these two must be considered, namely the starting-point and the term. The beginning, indeed, pertains to apprehension, but the term pertains to judgment, for cognition is perfected in judgment ... But the term of cognition is not always in one and the same manner; for sometimes it is in sensation, sometimes in imagination, and sometimes in the intellect alone ... But there are certain things surpassing what falls under the senses and what belongs to the imagination ... and therefore cognition according to judgment ought to be verified (*terminari*) neither in imagination nor in sense ... Hence concerning divine things verification should not take place either in imagination or sense ... And for this reason they err who try to proceed in a uniform way in these three divisions of speculative science." *In I Sent.*, d. 19, q. 5, a. 1, ad 7 ... "the first operation regards the essence of the thing; the second looks to its act of existing." *In I Sent.*, d. 38, q. 1, a. 3, *Solutio* ... "Since in the thing there are two principles, the essence of the thing and its act of existing, to these two there corresponds a twofold operation of the intellect ... One ... by which it apprehends the essences of things ... But the other comprehends the existence of the thing, by composing the affirmation." *Sum. Theol.* IIa IIae. 173.2. *Resp.* ... "the judgment completes cognition (*completivum cognitionis*)."
In I Peri Hermeneias lect. 1, n. 1 ... "the first operation is ordered to the second." *Cont. Gent.* I. 58 ... "composition and division is posterior to the consideration of the essence of the thing, which is the principle of the act of composition and division." *Cont. Gent.* I. 59 ... "our intellect, in apprehending the incomplex does not as yet reach its ultimate perfection, since it is still in potentiality with respect to composition and division."

Thus the human intellect apprehends universal being.³⁷ The metaphysician considers singular beings, "not according to their proper intelligible values through which they are *such* and *such* beings, but according as they participate in the universal constitutive intelligibility of being."³⁸

³⁷ Cf. *Sum. Theol.* I. 55. 1. *Resp.* ... "since the object of the intellect is universal being and truth." (St. Thomas does not distinguish here between the angelic and human intellects in so far as the object of intellect as intellect is concerned.) *Sum. Theol.* I. 78. 1. *Resp.* ... "the intellectual powers, in regard to the most common object, which is universal being." *Sum. Theol.* I. 79. 2. *Resp.* ... "For the intellect, as we have said above, has an operation concerning being-in-general." *Sum. Theol.* I. 82. 4. ad 1 ... "according as the intellect is apprehensive of universal being and truth ... under the universal intelligible constitution of being and truth." *Sum. Theol.* I. 87. 3. ad. 1 ... "The object of the intellect is something universal, namely, being and truth." *Sum. Theol.* Ia IIae. 9. 1. *Resp.* ... "the first formal principle is universal being and truth, which is the object of the intellect." *De Malo* q. 6. *Resp.* ... "the object of the intellect is the first principle in the genus of formal causality, for the object of the intellect is being and truth." Note, however: *Sum. Theol.* I. 16. 3. ad 3 ... "But the true cannot be apprehended unless the intelligible constitution (*ratio*) of being be apprehended."

³⁸ On *The Trinity* V, 4, ad 6. Note also, *Sum. Theol.* I. 44. 2. *Resp.* wherein St. Thomas gives his resumé of the progressive movement of thought to the consideration of being as being (*ens inquantum est ens*). This text is also crucial to our understanding of St. Thomas' interpretation of Aristotle on the problem of creation. See Etienne Gilson, *The Spirit of Mediaeval Philosophy*, London: Sheed and Ward, 1936, pp. 438-441. Also Anton C. Pegis, *St. Thomas and The Greeks*, Milwaukee: Marquette U. Press, 1939, pp. 101-104.

The relationship between Metaphysics, which considers being simply as being (*secundum quod est ens*), and the other sciences, which study being in so far as it is being of a particular kind (*secundum quod est huiusmodi ens*), is discussed by St. Thomas in IV *Metaph.* 1, n. 530-532. See esp. n. 530, 532. "Aristotle says 'as being' moreover because other sciences, which are concerned with particular beings, consider being, it is true, since all subjects of the sciences are beings, but they do not consider being according as it is being but according as it is being of a particular kind (*huiusmodi*) ... No particular science considers universal being as such, but only some part of being divided from others."

Also *Cont. Gent.* II. 37. "For which reason neither does it belong to the natural philosopher to consider such an origin of things, but to the first philosopher (metaphysician) who considers universal being and those things that are separate from motion."

Being is, therefore, the proper object of the intellect but the intellect encompasses that object diversely in the acts of simple apprehension and judgment. In the first act the intellect expresses being in that which is its intelligible constitution, essence. In the second act it expresses being in that which is its act, namely, the act of existing (*esse*). "Enunciabile composition signifies some existence of a thing (*aliquid esse rei*)."³⁹ Apart from this cognition of the act of existing in the second act of the intellect, it is impossible for the human mind to know the act of existing, as it is exercised by things. "But our intellect, whose knowledge has its origin in things that have concentered existence (*esse compositum*), cannot know that act of existing except in composing and dividing."⁴⁰ It is in the operation of the intellect according to which it composes and divides, that we find the separation or abstraction from matter proper to Metaphysics; the intellect divides one thing from another by this fact, namely that it understands that the one is not the other.⁴¹ "Our reason discovers that there is a self-subsisting act of existing; wherefore although what we call the act of existing is signified after the manner of something concentered, yet our intellect in attributing existence to God soars above the mode of signification and ascribes to God that which is signified, but not the mode of signifying."⁴² Precisely because of the "defect of the created intellectual power itself, whose natural ability is restricted to created being (*determinata ad*

³⁹ *Sum. Theol.* I. 14. 14. ad 2.

⁴⁰ *In I Sent.*, d. 38, q. 1, a. 3, ad 2. Note... "everything in which essence and existence are distinct is composite (*Conf. Gent.* I. 22). Also, "But it is of the intelligible constitution of a thing caused to be in some way composite" (*Sum. Theol.* I. 3. 7. ad 1).

⁴¹ *On The Trinity* V. 3. *Resp.*... "because, according to the operation by means of which it composes and divides, it distinguishes one from the other by this fact, namely, that it understands that the one is not the other (*unum alii non inesse*)... according to the operation of the intellect as it composes and divides, which is properly called separation; and this mode relates to Divine Science or Metaphysics."

⁴² *On The Power of God* VII. 2. ad 7.

ens creatum)"⁴³ we cannot grasp existence simply as act in a concept.

Existence is the ultimate act of being itself and because of this it is also the ultimate act of being intelligible; "the first thing conceived by the intellect is being, because everything is knowable only inasmuch as it is actually."⁴⁴ That simply means that a thing cannot *be intelligible* and not as yet *be at all*. The metaphysician is not content to form concepts in order to contemplate essences, he seeks the existence of things. "The natural philosopher and the metaphysician consider essences according as they have existence in things."⁴⁵

In other words the intellect does not stop at essences but seeks existence itself, the ultimate fulfilment of being. In order to conceive the real in its integrity, we must therefore conceive being as signifying the coincidence of essence and existence. Within the range of human experience, there is no real being which is not an existing essence and an existent conceivable through its essence. We cannot know *whether* anything is without knowing *what it is* in some way, either with perfect or confused cognition.⁴⁶ That is to say, we cannot know of the existence of anything without also knowing its essence, though in many cases the essence is apprehended obscurely. Existence is always the existence of something, of a capacity to exist.

⁴³ *In IV Sent.*, d. 49, q. 2, a. 6, ad 4.

⁴⁴ *Sum. Theol.* I. 5. 2. *Resp.* Cf. *Qu. Disp. De Anima* a. 6. ad 2... "existence itself is the ultimate act which is participable by all things; whereas it participates nothing." *Comp. Theol.* C. 11... "the ultimate act is existence itself" *On Separate Substances* c. 6, (ed. Mandonnet, p. 97) ... "participative of the ultimate act, which is existence." *Cont. Gent.* III. 66... "Now in every action actual existence is the chief thing intended, and the ultimate thing in the order of generation."

⁴⁵ *On The Trinity* VI. 3. *Responsio.* Cf. *In I Sent.*, d. 19, q. 5, a. 2, ad 1... "as for the metaphysician and the natural philosopher, who consider things according to their existence." *In VIII Metaph.* 17, n. 1658... "the philosopher who seeks the existence of things."

⁴⁶ *On The Trinity* VI, 3, *Responsio.* "... concerning no thing are we able to know *whether it is* (*an est*) unless we know in some way *what it is*, either with perfect knowledge or with a confused cognition."

We have just seen that the intelligible constitution, the intelligible, is grasped only in so far as it indicates order or relation to existence.⁴⁷ Thus in every being there is a proportion between *that which* is and the act *by which* it exists. This thing is to its own act of existing as that thing is to its own act of existing. It is an irreducible analogy or proportionality. This diversity of relations to the act of existing gives an intrinsically proportional value to the very concept of being which is implicitly manifold; "in predication all univocal names are reduced to one first non-univocal, analogical name, which is being."⁴⁸ We are not concerned with a simple apprehension of a universal more universal than other objects of the first operation of the mind. We are concerned primarily with the act of existing in so far as it establishes and founds the intelligible structures of reality. If this act transcends concepts it is the object of every perfected act of intellection, that is, of judgment. In judgment the metaphysician reaches the actuation of being, its act of existing. When he conceives being it is

⁴⁷ Cf. *On The Power Of God* III. 5. ad 2... "from the very fact that existence is attributed to an essence, not only is the essence said to be but also to be created: since before it had existence it was nothing, except perhaps in the intellect of the Creator, where it is not a creature but the Creating Essence." *On The Trinity* V. 3. *Responsio*... "For since everything is intelligible inasmuch as it is in act... it must necessarily be that nature or quiddity itself of a thing is understood either according as it is a certain act... or according to that which is as an act to it, ... and this [order or relation to act] is that which is to any nature the source of its intelligibility (*suam rationem sortitur*)."

⁴⁸ *Sum. Theol.* I. 13. 5. ad 1. Cf. *Sum. Theol.* I. 4. 3. *Resp.*... "according to some sort of analogy, as existence itself is common to all. *On The Power of God* VII. 7. *Resp.*... "diverse relation to the act of existing precludes an univocal predication of being." *In II Sent.*, d. 1, q. 1, a. 1. *Solutio*. "The nature of entity is found in all things... since the nature of entity has one constitutive intelligibility according to analogy." *Cont. Gent.* II. 15. "Existence is predicated of everything that is... If however it be said that being is not a univocal predicate, the above conclusion follows nonetheless. For it is not predicated of many equivocally, but by analogy." For a penetrating study of the problem of analogy see Gerald. B. Phelan, *St. Thomas and Analogy*, Milwaukee: Marquette U. Press, 1941. Also James F. Anderson, *The Bond of Being*, St Louis: Herder, 1949.

full-blown concept, his intellect perceives being in its thoroughgoing proportionality and its transcendence above the limits and conditions of empirical existence. Existence is not an *intelligible* nor an *object of thought*; we use these as synonymous with essence. It is however the primary source of intelligibility.⁴⁹

Being (*ens*) is the same as *that which is* (*quod est*). Thus it signifies both the thing in that it says *that which* (*quod*) and it signifies existence (*esse*), in that it says *is* (*est*).⁵⁰ The term *being* is derived from the act of existing while the term *thing* is derived from the quiddity or essence.⁵¹ The *subject* posses-

⁴⁹ Cf. *On Truth* I. 1. *Resp.*... "Nothing is found to be affirmatively said, in an absolute way, that can obtain in every being, except its essence... being is taken from the act of existing while the name thing expresses the quiddity or essence of the being... (ad 3 of the obj. to the contrary) the act of existing is distinguished from that to which this act belongs. The constitutive intelligibility of being, however, is derived from the act of existing, not from that to which the act of existing belongs." *In Metaph. Prooemium*... "Although the subject of this science is universal being (*ens commune*), nevertheless it is said to be altogether (*tota*) concerning those things which are separated from matter according to existence and understanding. Because not only those things which can never exist in matter, such as God and intellectual substances, are said to be separated according to existence and understanding, but also those things which are able to be without matter, such as universal being. This could not be the case however if they were dependent on matter for their existence." *In IV Metaph.* 1. n. 532... "considers universal being as being." *Ibid.* n. 534... "but being is predicated of all beings in this way [i.e. analogically]; therefore all beings pertain to the consideration of one science, which considers being inasmuch as it is being."

⁵⁰ Cf. *In Peri. Herm.* 1.5, 20... "for being (*ens*) is nothing other than *that which is* (*quod est.*). Thus *is* is seen to signify both the thing as when I say *that which* (*quod*) and existence, as when I say *is* (*est*)." *In IV Metaph.* 1, n. 535... "Aristotle says in the first place, therefore, that being or that which is, is predicated in many ways."

These are obviously texts wherein St. Thomas is commenting on Aristotle. See, however, *In I Sent.* d. 8, q. 5, a. 2, *Sol.*... "*that which is* (*quod est*) is the *subject* having existence (*suppositum habens esse*)." *On Truth* I. 1. *Sed. Contra* 3... "*that which is* (*quod est*) is the same as *being* (*ens*)."

⁵¹ Cf. *In I Sent.*, d. 8, q. 1, a. 1, *Sol.*... "this name *thing* is imposed on the thing from its quiddity... this name... *being* is imposed from the act

ing existence, is called a being.⁵² But it is also true, says St. Thomas, "that this term *being*, inasmuch as it implies the thing to which this kind of existence belongs, signifies the essence of the thing."⁵³ That is why St. Thomas repeats with Avicenna that "being and essence are the objects that are first conceived by the intellect."⁵⁴

Essence is that which a thing is. "The intelligible constitution does not signify existence, but *the being what it is (esse quid)*, that is what something is."⁵⁵ St. Thomas notes that since the definition expresses what the thing is, "philosophers have taken to using the word quiddity for the word essence. Aristotle frequently calls this the *what a thing was to be (quod quid erat esse)*, in other words, that whereby a thing has its *being what it is (esse quid)*."⁵⁶

The act of existing is that whereby the being is. Just as the act of the runner is his running, so too the very act of being is existence.⁵⁷ Existence is that whereby a being formally is,

of existing itself (*ab ipso actu essendi*).⁵⁸ *Ibid.* d. 25, q. 1, a. 4, *Sol.* . . ." from the quiddity this name thing is derived . . . But the name of being is derived from the existence of the thing (*esse rei*).⁵⁹ *In II Sent.*, d. 37, q. 1, a. 1, *Sol.* . . . "taking the name of *thing* according as it has a certain quiddity or essence; *being*, on the other hand, according as it has existence (*esse*).⁶⁰ *In IV Metaph.* 2, n. 553 . . . "this name *thing* is imposed from the quiddity alone; whereas this name *being* is imposed from the act of existing (*ab actu essendi*).⁶¹ *Ibid.* n. 558 . . . "And, therefore, this name *being* which is imposed from existence itself (*ab ipso esse*), signifies the same thing as that name which is imposed from the very essence." *Cont. Gent.* 1, 25. . . "the name of thing is imposed from the quiddity, just as the name of being is imposed from the act of existing."

⁵² Cf. *In XII Metaph.* 1, n. 2419. "For something is called a being as it were having existence (*quasi esse habens*)."

⁵³ *II Quodl.* 3, *Resp.*

⁵⁴ *On Being And Essence*, Introduction.

⁵⁵ *On The Power of God* VIII. 2. ad 11.

⁵⁶ *On Being and Essence* C. I.

⁵⁷ Cf. *In I Sent.*, d. 8, q. 5, a. 2, *Sol.* . . . "one can call the very act of existing (i.e. existence) *that by which the thing is (quo est)*, just as that by which someone runs in his act of running." *In I Sent.*, d. 19, q. 2, a. 2, *Sol.* . . . "just as motion is the act of the mobile thing itself in so far as it is mobile; so existence is the act of the existent, in so far as it is being."

for the act of existing brings it about that the thing formally is.⁵⁸ The existence of a thing is the act of an essence; the essence is a capacity for existing, a *possibility* of existing⁵⁹: "existence denotes a certain act, since a thing is said to exist, not through being in potentiality but through being in act. Furthermore, everything to which an act belongs, and which is distinct from that act, is related thereto as potentiality to act; since act and potency are so called in relation to one another."⁶⁰ Everything exists through having existence, that is, through participation of the act of existing itself. But, St.

Sum. Theol. I. 3. 4. ad 2... "existence... signifies the act of existing."
Sum. Theol. I. 50. 2. ad 3... "the very existence is that whereby the substance is; as the running is that whereby the runner runs." IX *Quodl.* 3. *Resp.*... "existence is said to be the act of being inasmuch as it is being, that is that whereby something is said to be an actual being in Nature (*in rerum natura*)."

⁵⁸ Cf. *In I Sent.*, d. 19, q. 5, a. 2, *Sol.*... "anything participates its created existence, whereby it formally is... in diverse things there is diverse existence, whereby the thing formally is." *Sum. Theol.* I. 75. 5. ad 4. ... "for existence itself is that whereby a thing is." *Cont. Gent.* I. 22. ... "each thing is by its own existence." *Cont. Gent.* II. 54. ... "existence is the act of that whereof we can say that it is." *Sum. Theol.* I. 5. 1. *Resp.* ... "existence is the actuality of every thing." *Ibid.* ad 1. ... "being properly signifies that something actually is, and act properly correlates to potentiality." *In II Sent.*, d. 17, q. 1, a. 2, ad 5. ... "that by which it formally is, is not some form which is part of its essence, but its own existence."

⁵⁹ Cf. *In I Sent.*, d. 33, q. 1, a. 1, ad 1... "existence itself is the act of the essence... the act of existing of the thing, which is the act of the essence." *On Spiritual Creatures* a. 11... "For it is obvious diverse acts belong to diverse things; for an act is always proportioned to the thing whereof it is the act. Now just as existence itself is a certain actuality of essence, so operation is the actuality of an active power or virtue. For according to this each of these is in act; essence in regard to existing and power in regard to operating... For potencies must be diversified according to their acts, since a potency is so called in relation to act." *Sum. Theol.* I. 54. 1. *Resp.* "For an action is properly the actuality of a power, just as the act of existing is the actuality of a substance or essence."

⁶⁰ *Cont. Gent.* I. 22. Cf. *In I Sent.*, d. 8, q. 5, a. 2, *Sol.*... "And because everything that does not have something from itself (*a se*), is possible in respect to that thing; an essence of this kind will be possible in respect to existence since it receives that act of existing from another... the very quiddity is possible and its act of existing is its act."

Thomas tells us, "that in which a thing participates in order to exist is [ontologically] prior to that thing . . . But existence itself cannot participate in something that is not of its essence (*de essentia sua*) . . . For nothing is more formal or more simple than existence, and thus existence itself can participate in nothing."⁶¹ "That which I call existence (*esse*)," says St. Thomas by way of summation, "is the most perfect of all; which is obvious from the fact that act is always more perfect than potency. Now no designated form is understood as actual except through the fact that existence is posited. For human nature or fire nature may be considered as existing in the potency of matter, or as existing in the power of the agent, or even as in the intellect: but when it has existence it becomes actually existent. Wherefore it is clear that that which I call the act of existing (*esse*) is the actuality of all acts and the perfection of all perfections. Nor may we think that existence as we understand it here can have anything added to it that is more formal and determines it as act determines potentiality: because existence in this sense is essentially distinct (*aliud secundum essentiam*) from that to which it is added and whereby it is determined. But nothing that is outside the range of existence can be added to existence: for nothing is outside its range except non-being, which can be neither form nor matter. Hence existence is not determined by something else as potency by act but rather as act by potency . . . And in this way this existence is distinct from that existence inasmuch as it is the existence of this nature or the existence of that nature."⁶²

⁶¹ Cont. Gent. I. 22-23.

⁶² On The Power Of God. VII. 2. ad 9. Cf. Sum. Theol. I. 3. 4. Resp. . . . "Secondly, because the act of existing is the actuality of every form or nature; for goodness and humanity are not signified as actual unless we signify that they are. Therefore the act of existing itself is compared to essence, which is distinct from it, as act to potency." Sum. Theol. I. 4. 1. ad 3. . . . "the act of existing itself is the most perfect of all; for it is compared as act to all things. For nothing has actuality except in so far as it is; wherefore the very act of existing is the actuality of all things, even of forms themselves. Therefore it is not compared to other things as the receiver is to the received, but rather as the received to the receiver. When therefore I speak of the existence of man, or of a horse, or of any-

Since existence is formal in respect of everything found in a thing it is innermost in each thing and most fundamentally present within all things.⁶³ It is that which is most immediate and most intimate in respect to all things.

Thus the act of existing is the deepest layer of reality; it is what is most central in the existing thing. The act of existing of each being is therefore more intimate to it than its intelligibility. In things it is the ultimate reason for their intelligibility. That is why truth which "follows the existence of the thing" is found in the judgment whose function is to affirm existence.⁶⁴

thing else, the act of existing itself is considered as a formal principle and as something received, and not as that to which the act of existing belongs." *Sum. Theol.* I. 4. 2. *Resp.* ... "for things are perfect precisely so far as they have existence in some manner." *Sum. Theol.* I. 7. 1. *Resp.* ... "Now that which is the most formal (*maxime formale*) of all, is the very act of existing." *In II Sent.*, d. 1, q. 1, a. 1, *Sol.* ... "the first in the formal order (*primum formale*), which is the act of existing." *Qu. Disp. De Anima*, a. 1, ad 17. ... "although the act of existing is the most formal (*formalissimum*) of all." *Cont. Gent.* II, 54. "Also, because the very act of existing is compared as act even to the very form." XII *Quodl.* 6, *Resp.* ... "anything receives completion through participating in existence; wherefore the act of existing is the complement of every form, since it is completed through having existence, and it has existence when it actually is." *Cont. Gent.* III. 66. ... "Now the most perfect of all effects is the act of existing, since every nature and form is perfected through being actually, and is compared to being actually as potency to act itself."

⁶³ Cf. *Sum. Theol.* I. 8. 1. *Resp.* ... "the very act of existing is what is most intimate to each thing and what is most fundamentally present within all things, since it is formal in respect to everything in a thing." *In II Sent.*, d. 1, q. 1, a. 4. *Sol.* ... "existence is more intimate to each thing than that through which the act of existing is determined." *Qu. Disp. De Anima*, a. 9. *Resp.* ... "among all, the act of existing is what most immediately and most intimately belongs to things." *Cont. Gent.* II. 52. ... "Also act itself is more perfectly actual than that which has act, for the latter is actual on account of the former ... to be actual in the most perfect way ... the most perfect act. Now this is existence, in which generation and all movement terminates: since every form and act is in potency before it acquires the act of existing."

⁶⁴ Cf. *In I Sent.*, d. 19, q. 5, a. 1, *Sol.* ... "Similarly I speak of truth, which has its foundation in the thing, but its constitutive intelligibility is completed through the action of the intellect, namely when the thing is

One contemporary Thomist has recently stated that according to St. Thomas evidence is a property of things in the sense that it has its root in things. It is the radical and potential intelligibility "blossoming in the mind and imposing itself on us in the judgment we bring to bear on the thing."⁶⁵ Another has remarked that to use the human intellect in accordance with its proper nature is to judge things according as they are. "As

apprehended in the intellect in the way in which the thing exists... truth is grounded more on the act of existing of the thing than on its quiddity (just as the name of being, too, is imposed from the act of existing) and the adequation in which the intelligible constitution of truth consists is achieved by a kind of assimilation of the intellect to the existence of the thing, through the very operation whereby it accepts it such as it is." *Ibid.* ad 7... "And since the constitutive intelligibility of truth is founded in existence and not in the quiddity, as we have said, truth and falsity, therefore, are properly found in the second operation." *On The Trinity* V. 3. *Resp.* ... "And because the truth of the intellect consists in this that it is conformed to a thing." *On Truth* I. 1. *Sed contra* 3. ... "Truth follows the act of existing of things." *On Truth* I. 2. *Resp.* ... "natural things, from which our intellect receives its knowledge, measure our intellect". *On Truth* XI. 3. ad 6 ... "truth does not depend on our knowledge but upon the act of existing of things." *In II Metaph.* 2, n. 298 ... "for the act of existing of a thing is the cause of the true judgment which the mind has concerning the thing." *Responsio ad Fr. Joannem Vercellensem* I. ... "The constitutive intelligibility of a stone is indeed in the intellect as in a subject, but it is in the stone as in that which causes truth in the conception of the intellect of the one knowing the stone to be such as it is." *Cont. Gent.* I, 61. "Further. The knowledge of the human intellect is caused by things in a certain manner (*quodammodo*), whence it follows that things known (*scibilia*) are the measure of human knowledge: since the judgment of the intellect is true through being in accordance with things, and not vice versa." *Cont. Gent.* III, 51 ... "since truth is consequent upon existence (*sequatur ad esse*)."
Sum. Theol. Ia IIae. 91.3. obj. 2. ... "But the human reason is not the measure of things, but vice versa."

See also: Gerald B. Phelan, "Verum Sequitur Esse Rerum," *Mediaeval studies*, I, (1939), pp. 11-22.

B. J. Muller-Thym, "The To Be Which Signifies The Truth of Propositions," *Proceedings of the American Catholic Philosophical Association*, XVI (1940), pp. 230-254.

⁶⁵ Jacques Maritain, *The Dream of Descartes*, New York: Philosophical Library, 1944, page 172 and note 217.

See also *A Preface To Metaphysics*, London: Sheed and Ward, 1948. *Existence and the Existent*, New York: Pantheon, 1948.

St. Thomas Aquinas used to say, the human mind is made to say that that which is, is; and that which is not, is not."⁶⁶ These are but corollaries from our original text that "the intellect, inasmuch as it is one power, has one natural object, of which it has knowledge immediately and naturally . . . This is nothing else than being."

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⁶⁶ Etienne Gilson, "Mediaeval Universalism and Its Present Value," *Independence, Convergence, and Borrowing in Institutions, Thought, and Art* (Harvard Tercentenary Publications) Cambridge: Harvard University Press, 1937, p. 213. See also *Being and Some Philosophers*, Toronto: Pontifical Institute of Mediaeval Studies, 1949.



ACTUALITY, POSSIBILITY, AND BEING

In metaphysics the highest generality is sought: we consider those concepts in terms of which all entities are characterized. We do not restrict our attention solely to some narrow realm of reality, to some particular species of animals, or to some carefully delineated region on the face of the earth. There may be limitations in exposition, and temporary limitations of attention, but these are merely devices aimed ultimately toward achieving maximum generalization.

Metaphysics is self-critical in a way and to an extent not to be found in any other field of study. This is an outcome of its extreme generality. Its subject-matter includes all subject-matters and hence all methodologies. Therefore metaphysics is also concerned with its own methodology. There is no more inclusive or more general study of methodology which might take upon itself the authority to criticize the methodology of metaphysics. Any such study would have to concern itself with all concepts and subject-matters, and so would itself be simply metaphysics. Any general denial of metaphysics is itself a metaphysical theory, and therefore self-contradictory.

The various fundamental concepts of metaphysics, such as "universal," "actual," "potential," and others, are not merely schemas whereby reality is envisioned as an orderly system, but are themselves components of the system. Many such concepts "apply" to themselves. For example, the attribute of "being a universal" is itself a universal. (Bertrand Russell's theory of types, in both its "simple" and its "ramified" form, holds that a concept cannot meaningfully apply in this way to itself; but the theory of types is unsound for reasons that have been pointed out elsewhere by Paul Weiss¹ and by the author.²)

¹ "The Theory of Types", *Mind*, n.s., XXXVII (1928), pp. 338-348.

² "Self-Reference in Philosophy", *ibid.*, LV (1946), pp. 64-73; "Remarks on the Theory of Types", *ibid.*, LVI (1947), p. 184.

It was a mistake of Aristotelian logic, and of systems of metaphysics stemming from Aristotelian logic, to fail to distinguish sharply enough the relation of attribution from the relation of identity. To say that redness is an attribute of an apple is not to say that redness is identical with the apple. Similarly, to say that the attribute of "being a universal" is an attribute of the attribute of "being a universal" is not the same as saying that the attribute of "being a universal" is identical with the attribute of "being a universal." A way of thinking that slurs over this important distinction is also a way of thinking that is likely to overlook the important self-applicative (i.e., self-attributive) character of many metaphysical concepts, and to confuse this character with the trivial character of self-identity possessed by all entities. The required distinction is clearly drawn in more recent logic.

Modern symbolic logic has clarified many other issues left obscure by the older Aristotelian logic and by the "idealistic logic" of such writers as Hegel and Bradley. The present essay tacitly utilizes some of these clarifications without embarking on a systematic discussion of symbolic logic itself.

I

It is reasonable to assume that the ultimate kinds of entity are as follows: (1) events, (2) substances, (3) selves or perceivers, (4) universals. The notion of "entity" is treated here as being the most general notion.

Propositions are universals of degree zero; attributes, classes and categories are universals of first degree; two-termed relations are universals of second degree; three-termed relations are universals of third degree; and so on.

Space and time form a single relational structure among events, namely the "space-time" of relativity theory. More specifically, space-time can be treated as being a five-termed relation whereby the space-time interval between one pair of events is compared numerically with the space-time interval

between another pair of events, in such a way that a positive or negative number indicates the ratio of the former interval to the latter. Numbers themselves may be regarded as universals that apply to universals, somewhat as Russell treats cardinal numbers as classes of classes. Particular regions of space-time are describable as attributes of the events filling those regions. The question may be left open as to whether or not there are ultimate atomic events having no other events as parts of themselves. Quantum theory suggests that this may be the case, and Whitehead advocates such a view with his "actual occasions." Further developments in theoretical physics may throw light on this question.

Every event and (perhaps) every substance has a region of space-time associated with it, namely the region that the substance or events "fills." Substances and events may overlap and may be parts of one another. The relation of overlapping and the relation of part to whole may be defined in terms of corresponding relations among the regions filled.

In spite of the relativity of space and time in relativity theory, it is a well-known doctrine of the theory that one event may temporally precede another event in an absolute sense. This is the case if an impulse travelling with the speed of light can pass from the former to the latter. We will say that the former event "absolutely precedes" the latter.

The question will be left open as to whether or not Russell and Whitehead are right in treating substances as sequences of events that bear certain relations of absolute precedence to one another. The question will also be left open as to whether selves (or perceivers) are to be regarded as substances, or as sequences of events, or as neither but something *sui generis*.

A change is a contrast between an event and some other event that absolutely precedes it. The contrast itself can be considered to be the triad consisting of the two events and an attribute possessed by the later event but not by the earlier event. Thus changes are not events but are triads disclosed by events. In saying that a substance "changes" we can mean

that changes are disclosed by events which overlap the substance or are part of the substance. Similarly for "changes" in a self or even "changes" in a complex non-atomic event. But propositions will not be said to change, either with respect to their truth and falsehood, or in other respects. In fact, no universal will be regarded as changing. Similarly Whitehead's "eternal objects," which are essentially universals, are said by him not to be subject to change.

II

A fundamental thesis of this essay is that possibility and actuality are attributes of universals rather than attributes of events, substances or selves.³ But there is no intention of denying that some substance may have a "possibility" or "potentiality" of developing in a special way, as an acorn to develop into an oak tree. The point is that all the various kinds of "possibility" and "potentiality" are best understood in terms of possibility as it applies to universals; and similarly for actuality.

A proposition (or universal of degree zero) is "actual" if and only if it is a true proposition. This explains in what sense actuality may be attributed to universals of degree zero. A proposition is "possible" if and only if it is logically self-consistent. A proposition is "naturally possible" if and only if it is logically consistent with the laws of nature. It is clear that if a proposition is naturally possible, then it is also possible, and that if it is actual, then it is also naturally possible.

It should be remarked that propositions are not here regarded as being either "mental entities" or "linguistic entities." Actual (true) propositions are, instead, here identified with the "truths" or "facts" that they respectively express, and these truths or facts are not merely mental or linguistic. Non-actual (untrue) propositions are similarly here regarded as

³ A similar view with regard to possibility is held by W. V. Quine in his article, "On What There Is," *Review of Metaphysics*, II (1948), pp. 21-38.

being other than merely mental or linguistic. Such non-actual propositions have the unique metaphysical status of being the contradictories of truths or facts. No propositions, whether true or false, have a space-time location, though the entities with which propositions are concerned may have space-time location and so may seem to lend an appearance of location to the propositions themselves. Though grass has a location, the fact that grass is green has no location.

The question is left open as to whether every proposition is true or false. (This is a complicated problem which cannot be very successfully discussed without use of the notation of symbolic logic.)

It has already been pointed out that propositions are here regarded as changeless. It is assumed, in particular, that they do not change with respect to being actual or non-actual, or with respect to having the attributes of possibility or natural possibility. A view contrary to this is likely to be held in any system of metaphysics that overemphasizes the mental aspects of propositions and the mental events associated with propositions. But the mere fact that I do not know whether or not it is going to snow in New Haven on January first, 2049, does not mean that the proposition asserting that it is going to snow there at that time is neither true nor false. Whichever the proposition is, true or false, it is that independently of time; and it is just as true (or false) on January first, 1949, as it is one or two hundred years earlier or later. The use of tensed verbs in propositions perhaps gives the impression that the truth of a proposition may change with time. Thus at one time it may be true "that it is snowing," and at another time it may be false "that it is snowing." We are really concerned, however, with two *different* propositions which seem to be the same only because they are expressed by the same sentence (in two different occurrences of the sentence). The propositions are different because the time referred to by the present tense of the verb is different in the two cases. The illusory appearance of identity of two such propositions can be avoided if time and place are explicitly mentioned when relevant, instead of being expressed in a roundabout fashion by such words as "here,"

"there," "now," and "then," and by tenses of verbs. We can regard verbs as tenseless if time is otherwise indicated; though for grammatical reasons a verb in English has to have some *apparent* tense associated with it, preferably the present tense. Specification of time often involves, at least tacitly, a specification also of some "frame of reference" in the sense of relativity theory; or it may involve merely the mention of specific events.

Classes (categories) and attributes (qualities or properties) are universals of first degree. An attribute is "actual" if and only if it applies to (is an attribute of) some entity. Similarly a class is actual if it is non-empty, that is, if it has some entity as a member. Thus redness is an actual attribute, because some substances are red, and actuality itself is an actual attribute because some attributes have the attribute of actuality. Similarly the class of all actual attributes is an actual class, because it has members. A defect of Aristotelian logic is its inability to deal with non-actual (empty) classes. It does not possess a similar defect with respect to propositions, since it can deal with non-actual (false) propositions.

It is desirable to assume that actuality as applied to propositions is different from actuality as applied to attributes and classes. The former sort of actuality will be called "propositional actuality," while the latter will be called "attributive actuality." There is no need to distinguish actuality as applied to attributes from actuality as applied to classes. This is because modern logic discloses that classes may be regarded as being attributes of a special kind.

Both propositional actuality and attributive actuality are actual attributes (have the attribute of attributive actuality, are non-empty attributes). An attribute is attributively actual if and only if the proposition to the effect that the attribute applies to some entity is propositionally actual (that is, true).

An attribute is "possible," or more precisely, "attributively possible," if the proposition asserting the actuality of the attribute is logically self-consistent. Similarly, an attribute is "naturally possible," or more precisely, "attributively naturally

possible," if the proposition asserting the actuality of the attribute is consistent with the laws of nature (and hence naturally possible).

It is desirable to distinguish between propositional possibility and attributive possibility, just as between propositional actuality and attributive actuality. Similarly it is desirable to distinguish between propositional natural possibility and attributive natural possibility.

Two-termed relational actuality is to be regarded as the attribute possessed by, and only by, non-empty two-termed relations. Explanations, along analogous lines, can be given for such notions as two-termed relational possibility, two-termed relational natural possibility; and similarly for relations of three or more terms.

Necessity can be explained in terms of possibility in an obvious way. For example, a proposition is propositionally necessary if and only if the contradictory of the proposition is not propositionally possible; and a proposition is propositionally naturally necessary if and only if the contradictory of the proposition is not propositionally naturally possible. In a similar way an account can be given of such notions as three-termed relational necessity and three-termed relational natural necessity. The details of this need not concern us here.

III

Let us return again to the question of the nature of change. Aristotle seems to analyze all change ultimately into a change of attributes, as if entities could take on and put off attributes somewhat as people put on and put off coats. Thus at one time the proposition, "X has the attribute Y," would be regarded as true, while at some later time the same proposition would be regarded as false, so that meanwhile X could be said to have changed in having lost the attribute Y.

From the standpoint of the present essay, however, a proposition cannot change from true to false. Changes are differences or contrast between events. Two propositions are

really involved, in any case of change, one true and the other false, instead of a single proposition that shifts from true to false with the passage of time. The first (true) proposition asserts that event A in substance X has the attribute Y. The second (false) proposition asserts that (subsequent) event B in substance X has the attribute Y. By regarding the attribute as applying thus to events in the substance, rather than to the substance itself, we avoid accepting the main Aristotelian doctrine of change. This is not to say that substances have no attributes. The point is that those attributes which, from an Aristotelian standpoint, are thought of as being donned and doffed by the substance are to be treated, instead, as attributes of events located in the substance or intimately associated with the substance.

Suppose that a substance X not only has the attribute Y, but suppose that the proposition, "X has the attribute Y," is a naturally necessary proposition. Then Y will be said to be a naturally essential attribute of X. If the proposition is necessary, as well as being naturally necessary, then Y will be said to be an essential attribute of X. Thus it is an essential attribute of every entity to be identical with itself, and it is a naturally essential attribute of every particle of matter to exert gravitational attraction upon every other particle of matter.

If an attribute of X is not a naturally essential attribute of X, we will call it a naturally accidental attribute of X. It is a naturally accidental attribute of my pencil that it is in my hand at a certain time.

Similarly, if an attribute of X is not an essential attribute of X, we will call it an accidental attribute of X. It is an accidental (though not a naturally accidental) attribute of my pencil that it is attracted toward the center of gravity of the earth.

Two-termed relations may also be viewed as essential, naturally essential, accidental, or naturally accidental with respect to the pairs of entities they relate, and an account of "internal" and "external" relations can be developed along these lines. The words "internal" and "external" of course do

not mean "located internally" and "located externally," since relations, being universals, have no location. We can say that R is an internal relation of X to Z if it is an essential attribute of X that it bear the relation R to Z. Otherwise R would be an external relation of X to Z (if it is a relation of X to Z at all). The notions of "natural internality" and "natural externality" of relations can be similarly described; and similar methods apply to three-termed relations, four-termed relations, and so on.

The question of change should be largely dissociated from the question of internality and externality of relations. Substances do not, strictly speaking, change their relations, and they do not change their attributes. If a certain substance is in a certain relation to another substance, it is in that relation to that other substance eternally and independently of the passage of time, regardless of whether its relation is internal or external with reference to the substances. To say that a substance changes its relations to other substances is here regarded as a *façon de parler* to express the fact that certain earlier events associated with the two substances are in a different relationship to each other from that of certain later events analogously associated with the two substances. The two different relationships among the events provide, indirectly, for two different relationships between the substances themselves, but these two relationships (or simply "relations") between the substances hold eternally and irrespective of the passage of time, and the same is true of the relationships among the events themselves, and indeed of all relations.

IV

The word "being" is notoriously ambiguous. It is also often elliptical. Sometimes "to be" means "to be unmolested," as when some one says, "Let him be." Sometimes "to be" means "to be of importance," and "to be a thing" means "to be a thing of importance," as in the case of the animal in a popular song of some years ago that lamented the fact that it "wasn't a thing at all."

One of the synonyms of "being" is "reality." Thus "to be real" often means "to be of importance," and hence "to be somebody or something," and hence, elliptically, "to be." Another synonym of "being" is "actuality." Here we regard actuality as an attribute of propositions, and also as an attribute of attributes and as an attribute of relations. A proposition is actual if it is true, an attribute is actual if something has it, and a relation is actual if it relates. In a similar way we could say that a proposition "has being" or "is real" if it is a true proposition, and that an attribute "has being" or "is real" if something has the attribute, and that a relation "has being" or "is real" if it relates. It is necessary to distinguish between these and various other meanings of "to be."

The word "exist" is also in many contexts synonymous with the word "be," but not in all contexts, and certainly not in all philosophical contexts. "Exist" seems associated with such elliptical uses of "be" as we find where "be" means "be of importance" or "be located in space and time." (In fact, there often seems to be a tacit assumption, though an incorrect one surely, that whatever is important is located in space and time, and that whatever is located in space and time is important.) If we do not insist on being too critical, we can accept such a statement as, "Whatever is real exists, and whatever exists is real." It also perhaps seems to sound all right to say, "Whatever exists, exists somewhere and at some time." However, when a mathematician speaks of the "existence" of a solution to an algebraic equation he does not mean to say that the solution is located at some position in space and time. In general, "existence" need not mean "existence in space and time," nor does "being" need to mean "being in space and time."

In considering the relations among the meanings of such words as "being," "actuality" and "reality," it will not be desirable, for our purposes, to take too seriously the vast tomes that have in the past been written on these meanings, since most of those works were written without any knowledge of the new standpoint introduced by symbolic logic. This does not mean that past philosophy is being rejected in

its entirety, but only that its viewpoint is here regarded as somewhat narrow and old-fashioned. A quotation from Aristotle, Aquinas or Bradley will not in itself be regarded as a final or satisfactory answer to a problem; but of course much can be learned from the great metaphysicians of the past. Many profound confusions are also due to them.

For the purposes of this essay, we shall sift out from among the various meanings of "being" those that seem of greatest philosophical and logical importance. These are eight in number. Five of them are relations and the remaining three are attributes. The relational meanings will be discussed first, since the others are in a sense derivable from them. Only the last three, the attributive meanings, can be regarded as meanings of "exist" as well as of "be."

The first of these eight meanings of the verb "to be" is "to be identical with." This meaning of "being" is simply identity. But by "identity" is not here meant the sort of identity referred to in the sentence, "A substance retains its identity throughout time." There is no question of time. Identity as here referred to is a dyadic relation that relates each entity (substance, event, proposition, etc.) to itself and to no other entity. Each substance is identical with itself, regardless of time. If an entity A is identical with an entity B, then there is absolutely no difference between A and B, and whatever is true of A is true of B and *vice versa*. Furthermore, if A and B have all the same attributes, then since B has the attribute of being identical with B, it follows that A must also have the attribute of being identical with B, so that A must be identical with B. There is no sense ever in saying that "A is partly identical with B," unless we mean merely that A and B have some spatio-temporal part in common. But if this is what is meant, it would be better to say it explicitly, and not speak in riddles. This first meaning of "to be" is illustrated by the sentence, "Beauty is beauty."

The second meaning of "to be" is "to have as an attribute." This is the relation of attribution. This meaning is exemplified by the word "is" in the sentence, "The sky is blue." Here we take the meaning of the word "blue" to be the attribute "blue-

ness," so the proposition could also be expressed by the sentence, "The sky has blueness as an attribute." Attribution is the relation of an entity to an attribute which the entity has. Some writers in the past seem to have tried to treat attribution as some sort of "partial identity," perhaps regarding the entity and its attribute as in some mysterious sense "partly identical." This amounts to trying to make one relation, identity, perform to some extent the function of another and wholly different relation, attribution. This second meaning of "to be" occurs in the so-called "singular propositions" of traditional logic in those cases where the subject is a name of an entity (and not a descriptive phrase in Russell's sense). An example is "Socrates is mortal." Many sentences can be rewritten in this form. For example, even the sentence, "Beauty is beauty," cited above, can be rewritten in this form as "Beauty is identical with beauty." The word "is" in this rewritten form has the second, rather than the first meaning of "to be," since a further rewriting gives, "Beauty has the attribute of identity with beauty."

We noted that the second meaning of "to be" is the relation of an entity to an attribute the entity has. The third meaning of "to be" is the relation of an attribute A to an attribute B such that every entity having attribute A also has attribute B. An example of this meaning of "to be" is given by the sentence, "Men are mortal." The attribute A is the attribute of being a man, and the attribute B is the attribute of being mortal. In this meaning of "to be" there is not supposed to be any assumption to the effect that A is a non-empty attribute. Similarly there is not any assumption that the negation of B is non-empty. Thus from "Men are mortal" we cannot conclude "Some man is mortal," nor can we conclude "Some non-man is immortal." This meaning of "to be" can be called "inclusion," since it is the relation of one attribute to another if the former is "included in" the latter.

The fourth meaning of "to be" is that which occurs in the universal affirmative proposition of Aristotelian logic. This meaning of "to be" not only asserts that every entity having the subject attribute has the predicate attribute, but it also

asserts, at least tacitly, that the subject attribute is non-empty and that the negate of the predicate attribute is non-empty. Otherwise "conversion by limitation" and "contraposition" would not both be valid processes. This meaning of "to be" will be called "traditional inclusion" in contrast to the ordinary inclusion represented by meaning number three. It is also illustrated by the same sentence used to illustrate meaning number three, namely the sentence, "Men are mortal," but in this case the meaning of "are" must be thought of as traditional inclusion, so that from "Men are mortal" it follows that "Some man is mortal" and that "Some non-man is immortal."

The fifth meaning of "to be" is the relation of an attribute A to an attribute B such that some entity has both attributes. It is the relation of overlapping between attributes, and is illustrated by the particular affirmative proposition of traditional logic, "Some man is mortal."

There two further meanings of "to be" which are closely similar to this fifth meaning and which will be treated here as variants of it. The first of these will be called "the plural variant of the fifth meaning." It is illustrated by the particular affirmative proposition of traditional logic, but with a plural subject and verb: "Some men are mortal." This proposition asserts that there is more than one entity to which the subject and predicate attributes both apply.

The other variant of the fifth meaning will be called "the non-plural variant of the fifth meaning." It is illustrated by the particular affirmative proposition of traditional logic, but with the adjective "some" replaced by the article "the," and with the subject and verb left in the singular. For example, we can take the particular affirmative proposition, "Some present king of France is bald," and then alter it in the way indicated so as to get: "The present king of France is bald." This proposition not only asserts that some entity has both the subject attribute and the predicate attribute, but it tacitly asserts in addition that subject attribute is non-plural (applies to not more than one entity). Thus from the proposition, "The present king of France is bald," we can conclude that there is at least one entity, and not more than one entity, with the attribute of

being a present king of France. This tacit assertion of the non-plurality of the subject attribute is analogous to the situation in the universal affirmative proposition of traditional logic, where there is a tacit assertion of the non-emptiness of the subject attribute. If we transform the proposition, "Some man is mortal," into the proposition, "The man is mortal," it might be objected that this latter proposition merely means that some particular man, who has elsewhere been specified, is mortal, and that the proposition does not imply that there is one and only one man. It is true that the word "the" is often used to indicate some entity previously described or pointed out, is being referred to again, but there is also a use of the word "the" to indicate non-plurality, and it is this latter use that is relevant to the present discussion.

From a transitive verb it is often possible to obtain an intransitive verb by making the direct object indefinite. Thus the intransitive verb "to sing" may be regarded as having the same meaning as the phrase "to sing something," where the verb in the phrase is transitive. We will call the intransitive verb an "elliptical form" of the transitive verb.

In a similar way, the verb "to be," as a verb taking a predicate noun or adjective, may be converted into a verb with a somewhat different meaning by making the predicate noun or adjective indefinite. Thus the meaning of the "elliptical form" of the verb "to be" is the same as the meaning of the phrase "to be something". In fact, we can identify the meaning of the verb "to exist" with the meaning of the phrase "to be something," so that "to exist" is obtainable from "to be" (in the non-elliptical sense of "to be"), very much as the intransitive verb "to sing" is obtainable from the transitive verb "to sing."

The remaining three of the eight meanings of "to be" are obtained by ellipsis from meanings two, three and four respectively. They are, consequently, also meanings of "to exist." It could also be argued that further meanings could similarly be obtained from meanings one and five. That obtained from meaning one, however, does not differ essentially from that obtained from meaning two, and that obtained from meaning

five does not differ essentially from that obtained from meaning four. The meanings obtained from the two variants of meaning five are nevertheless of special interest, and probably should be listed as meanings nine and ten.

The sixth meaning of "to be" is obtained from the second meaning (attribution) by ellipsis. Hence "to be," in this sixth sense, means "to have some attribute" ("to be something"). This meaning is the attribute of having some attribute. But every entity has the attribute of having some attribute. Thus every entity has being (i.e., existence) in this sense. Existence, in this sense, is the most general and trivial of attributes. This is the sort of being that Hegel listed as the simplest kind at the outset of his *Logic*. It is an attribute rather than a relation, and it is coextensive with the attribute of being an entity. Since every entity has the attribute of being identical with something (e.g., with itself), the meaning of "to be" obtained by ellipsis from the first meaning (identity) is also coextensive with the attribute of being an entity and hence also with meaning six. Therefore we have not distinguished it as an essentially different meaning from six.

The seventh meaning of "to be" is obtained by ellipsis from the third meaning, that is, from inclusion. It is an attribute that an attribute A has if A is included in some attribute B. This meaning of "to be" is an attribute possessed by every attribute and only by attributes, since every attribute is included in some attribute, namely in itself. Ordinary language does not provide us with examples of this meaning of "to be," since the meaning from which it is derived by ellipsis, the third meaning, is rare enough in ordinary language, and when the ellipsis has been performed it is usually understood as performed on the fourth meaning rather than on the third meaning. Thus, "Men are," is ordinarily to be interpreted as illustrating meaning number eight, to which we turn.

The eighth meaning is obtained by ellipsis from the fourth meaning, that is, from traditional inclusion. The eighth meaning is the attribute that an attribute A has if it is included, in the traditional sense, in some attribute B. This sort of existence (i.e., traditional inclusion in some attribute B) applies to

non-empty attributes and only to non-empty attributes, since A can be traditionally included in B only if A is non-empty. Strictly speaking, this sort of existence cannot be said to apply to universal (all-inclusive) attributes. This is because if A is all-inclusive there is no attribute B in which A is traditionally included, since the negate of B must be non-empty for such an inclusion to hold. To illustrate the eighth meaning we can use the proposition, "Men are." This is expressed more naturally as "Men exist," or as "There are men." It is equivalent to saying that the attribute of being a man is a non-empty attribute and also non-universal, though the second stipulation, that of non-universality, seems generally in practice to be ignored. The eighth meaning is therefore essentially the attribute of non-emptiness, and in saying "Men exist" we are saying essentially that the attribute of being a man is a non-empty attribute.

The meaning obtained by ellipsis from the fifth meaning, that is from the relation of overlapping, is also in effect the attribute of being non-empty, since to say that an attribute overlaps some attribute is in effect to say that it is non-empty. In this case, however, we are not troubled by any apparent need for a stipulation concerning non-universality. This meaning, though it does not differ in practice from the eighth meaning, can be regarded as illustrated by the proposition, "Some man exists." This proposition is taken to mean that the attribute of being a man is non-empty.

The meaning of "to be" obtained by ellipsis from the plural variant of the fifth meaning is illustrated by the proposition, "Some men exist." This meaning is the attribute that applies to those and only to those attributes which are "plural," i.e., each of which itself applies to more than one entity. In saying that "Some men exist" we are in effect saying that the attribute of being a man applies to more than one entity. This might perhaps be called the ninth meaning of "to be."

The meaning of "to be" obtained by ellipsis from the non-plural variant of the fifth meaning is illustrated by the proposition, "The present king of France exists." This meaning

is the attribute that applies to those and only to those attributes which are "unit attributes," i.e., each of which itself applies to one and only one entity. In saying that "The present king of France exists" we are in effect saying that the attribute of being a present king of France applies to one and only one entity. Of course the proposition in question is false if the word "present" is taken to mean "at the time this essay is being written," since the attribute is clearly empty. This meaning of "to be" might perhaps be called the tenth meaning.

It should perhaps be remarked that the eighth meaning is synonymous with "attributive actuality." It was pointed out in an earlier section of this essay that attributive actuality is the attribute of non-emptiness as applied to attributes. This provides an important link between the theory of being and the theory of actuality.

In the Whitehead-Russell system of logic the various meanings of "to be" discussed above are expressed approximately by the following symbols: First meaning (identity), by the usual equality or identity symbol. Second meaning (attribution or class-membership), by the Greek letter epsilon (or by the notation Fa , where F is the attribute and a is the entity to which F is attributed by the proposition Fa). Third meaning (inclusion), by a horseshoe open on the right. Fourth meaning (traditional inclusion) and fifth meaning (overlapping), not expressed by any single symbols. Sixth meaning (the most inclusive and trivial attribute), by the V-shaped symbol denoting the universal class. Seventh meaning (an attribute co-extensive with the attribute of being an attribute), not expressed by any single symbol, though it could be said to be expressed by "Cls" if all attributes are regarded as being classes. Eighth meaning (an attribute coextensive with the attribute of being a non-empty attribute), by the reversed capital "E" following by an exclamation point. Ninth meaning (an attribute coextensive with the attribute of being a plural attribute), not expressed by any single symbol. Tenth meaning (an attribute coextensive with the attribute of being a unit attribute), the symbol "1" denoting the cardinal number one. The tenth meaning can also be expressed in the Russell-White-

head logic by an appropriate use of the forward or unreversed capital "E" in connection with the notation of the theory of descriptions.

Meanings two through ten of "to be" are concerned with attributes. There are also analogous meanings of "to be" concerned universals of degrees other than first degree (attributes being universals of first degree), that is, concerned with propositions (universals of degree zero), with two-termed relations (universals of degree two), with three-termed relations (universals of degree three), and so on. Thus there is a meaning of "to be" corresponding propositional actuality, that is, to truth, just as meaning number eight corresponds to attributive actuality. There is also a meaning corresponding to two-termed relational actuality. This meaning of "to be" is expressed in the Whitehead-Russell logic by the reversed capital "E" with a dot over it and followed by an exclamation point. It is the attribute of being a non-empty relation.

* * *

The words "being," "existence," "possibility," and "actuality," as used by past and present philosophers, often are very unclear as to meaning. This essay has attempted to present some clearer meanings that may be attached to these words. The unclear meanings so often associated with these words are perhaps admixtures and confused combinations of these clearer meanings. By greater use of these clearer meanings philosophers might deal with their problems more effectively.

If this approach is to some extent a break with ancient and Aristotelian ways of speaking, it can be remarked that metaphysics, no less than physics, should be willing to try to benefit from recent mathematical and logical research.

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Critical Studies

EPISTEMOLOGY AND COSMOLOGY: E. A. MILNE'S THEORY OF RELATIVITY

The general theory of relativity offered a new theory of the universe. Modern cosmology, from 1917 on,¹ was by many minds thought to involve the comparison of various possible solutions of the differential equations of the theory of general relativity with observations on our local part of the universe. Since these equations are developed from consideration of our locality, and their solutions, in the general formulation, involve no quantities which refer to properties of the entire universe, their use in cosmology is accompanied by assumptions about the physical state of the whole and by *ad hoc* hypothetical additions which are not obtainable by deduction from the axioms. Einstein's famous "cosmological constant" is the principal example of such a factor. Indeed, the conjectural nature of relativistic cosmology can be clearly judged from the fact that the three accepted tests of general relativity refer to its prediction of *purely local* physical situations surrounding gravitating mass-points.² Since 1917, use of the large telescopes has revealed information about physical events at great distances and, in view of the finite velocity of light, at age-old epochs. From these observations, an estimate of the mass-density and other physical aspects of the universe beyond our locality has been

¹ See A. Einstein's paper of that year "Cosmological Considerations on the General Theory of Relativity", *Sitz. d. Preuss. Akad. d. Wiss.*, 1917, translated in the volume *The Principle of Relativity* (London: Methuen, 1923), a collection of original memoirs by H. A. Lorentz, A. Einstein, H. Minkowski, and H. Weyl.

² The tests are: the apparent deflection of the paths of light rays as they pass the surface of a large mass, in our case, the sun; the advance of the perihelion of the orbit of Mercury with time; the shift due to gravity of the frequency of lines in the spectra of heavy masses, such as the sun and certain heavy stars. This third test is not to be confused with the shift of spectral frequencies of the light from distant nebulae, to be discussed below. In all these discussions, the term 'local' may indeed refer to interstellar and at times to galactic dimensions, but its significance arises in that it does not refer to intergalactic or greater cosmic regions.

provided. More striking has been the interpretation of the observed shift toward the red of the spectra from distant nebulae, a shift which increases with distance. It has been surmised that this is a Doppler effect which indicates the continual expansion of the universe, the shift being analogous to the fall in the pitch of a train whistle as the train rushes away.

The various cosmological proposals by Einsteinian relativists seek to show the structure of the world as a consequence of the basic notions of relativity. In particular, the irrelevance of the state of motion of an observer to his description of the fundamental laws of nature is to be maintained. Furthermore, gravity is understood as being a description of the fact that particles move along certain minimal paths in non-Euclidean space. In this theory, the effect of one material particle on another particle in the old-fashioned sense of gravitational attraction becomes indirect; that is, a particle moves on a minimal path in a space having a degree of curvature dependent on the material entities which exist in it, rather than having its path bent by the attraction between it and other material bodies, all of them existing in an absolute or receptacle-like space.

But these fundamental ideas are not sufficient to define a unique universal model of the world. There is, for example, no way of determining, by this theory alone, the actual distribution of masses and their relative velocities. One might wish, presumably, that a self-consistent world model could do just that.⁵ But even with the cosmological factors, which originally were added so as to extend the range of application of general relativity theory from the very small to the very large, there has been an ambiguity which allows for an embarrassing variety of possible systems. In its most logical form this is due to the

⁵ Whether, in addition, it could specify the *quantity* of such mass particles as well as other facts which *prima facie* seem contingent to any logically-developed theory, is not generally agreed. The tendency of most philosophers of science was negative, that of Eddington, affirmative; see his *Relativity Theory of Protons and Electrons* (1936), *The Philosophy of Physical Science* (1939), *Fundamental Theory* (1946); Cambridge: Cambridge University Press.

following: ⁴ we have two essential data, the average density of matter in the universe, and the rate at which that matter is receding from any point considered as the center; but the Einsteinian cosmologists have three *ad hoc* factors, one which specifies the degree of curvature of the universe, a second which states the sign of the curvature, and a third which gives the actual magnitude of the cosmos or the scale of the cosmic model. One can hope that further exploration with the great telescope on Mt. Palomar will provide further crucial facts, but at present the difficulties remain.

E. A. Milne was stimulated by this situation,⁵ to reconsider the basic injunction of Einstein's general theory: are there, as Einstein postulated, actually no preferential frames of reference from which to describe the universe? If not, one is compelled to search for yet more solutions to the modified equations of general relativity in the hope that hitherto unexamined solutions of these equations may provide an unambiguous description of the world as it exists, in apparent stability and with processes of cosmic scale. But Einstein's postulate may be questioned. We may find that the theoretical justification actually offered for the injunction is faulty or incomplete, and we may be able to discern evidence of physically preferred vantage points from which to observe the world and to formulate its rules of behavior. Milne makes an impressive and constructive attempt to criticize this situation in both ways, an attempt which is of a radical nature, striking as it does at the epistemological and ontological roots of Einstein's conception in the general theory.

Milne argues that we can avoid Einstein's postulate by making a more abstract analysis of the primitive ideas of asymmetric succession and of communication, and by harmoniz-

⁴ For further details see G. J. Whitrow's popular account of *The Structure of the Universe* (London: Hutchinson's University Library, 1949), ch. IV, V, VI.

⁵ E. A. Milne is Rouse Ball Professor of Mathematics in the University of Oxford and Fellow of Wadham College. His principal collaborator in recent years has been Dr. G. J. Whitrow, presently Lecturer in Mathematics at the Imperial College of Science and Technology in London.

ing present observations with a general requirement of Mach which asserts that the properties of nature (its "laws") are of nature taken in its entirety. I shall state and examine some of the philosophical features, consequences, and claims of Milne's critique so far as this is possible without use of technical language.⁶

Ernst Mach pointed out that a material entity moves, in its free inertial path, with respect to other bodies (actually with respect to the center of mass of the universe), and *not* with respect to Newton's absolute space. Inertial properties of matter are ascribed to the material universe as a whole. Stated as Einstein's principle of equivalence, which assumes the qualitative identity of inertial and gravitational effects, Mach's doctrine is used to derive the geometry of the world from factual knowledge about the matter in the world. However, Mach's view is more fundamental than appears in the Mach-Einstein formulation, for Mach's suggestion may be phrased in quite abstract form: the laws of nature are essentially determined by the matter which forms nature. This is not merely to say that

⁶ Milne's work has appeared in numerous articles, symposia and in two monographs. The works of principal relevance to this account are: *Relativity, Gravitation and World-Structure* (Oxford, 1935);

Kinematic Relativity (Oxford, 1948), hereafter referred to as *K. R.*

"Some points in the philosophy of physics: Time, Evolution and Creation," *Philosophy* 9 (1934)

"On the origin of laws of nature," *Nature*, (June 12, 1937)

"Remarks on the philosophical status of physics," *Philosophy* 16 (1941)

"The fundamental concepts of natural philosophy," *Proc. Roy. Soc. Edinburgh* 62 10 (1943)

Presidential Address to the Royal Astronomical Society, April 14, 1944, *Monthly Notices, Roy. Astron. Soc.* 104 120 (1944)

and the immediate occasion for this study, Milne's contribution to the 1947 Premier Symposium de l'Académie Internationale de Philosophie des Sciences:

"Kinematic Relativity," Fasc. 3, pp. 7-25. *Archives de l'Institut International de Sciences Théoriques, Série A* (Paris: Actualités Scientifiques et Industrielles #1065, Hermann et Cie., 1949).

The cursory nature of this last article compels the student to consult the more extensive works. There is, however, in Fasc. 3 a valuable discussion of Milne's work by other participants in the symposium, namely Mssrs. Dingle, Donder, Destouches, Gonseth, Lemaitre, Viard and Weyl.

the behavior of the world, governed, it seems, by laws which are logically compatible with many hypothetical assemblages and arrangements of matter, is due to the contingent distribution of matter actually in it. That would merely be ascribing the specification of an *instance* of a general physical law to the contingent magnitudes, in the instance concerned, of the physical variables entering that law. Mach's view, however, is rather that matter is "an essential factor in causing those properties which it is able to display."⁷ Here "properties" refers to the laws themselves. This means that we no longer conceive the general laws of nature (in Newtonian fashion) as *not* involving reference to the particular configuration of material entities in the universe. That configuration became relevant to the Newtonian description only at the point of requiring the prediction of the behavior of *specific* bodies subject to their peculiar local conditions. What is now envisioned is the dependence of the *formal* structure of the general laws of nature on the distribution of matter, not only the latter's role in those special equations which are generated by the application of these general laws of specific bodies in specific circumstances. Milne cogently remarks⁸ at this logical juncture that the laws of nature are thus considered to be a consequence of the content of the universe being what it is. Since the description of that content is different for different observers, it seems quite natural to expect that the laws of nature will be different for different observers. As a consequence, these laws will be identical only for those *whose world descriptions are identical*. The requirement of general invariance of form as imposed on the laws of nature by Einstein's theory of general relativity is thus relaxed, and one is free to search for sets of physical observation points from which observers would obtain equivalent world-views.

⁷ A. S. Eddington, *Space, Time and Gravitation* (Cambridge, 1920), p. 163. For Mach's own formulation, see E. Mach, *The Science of Mechanics: A Critical and Historical Account of its Development* (5th Eng. ed., LaSalle, Illinois: Open Court, 1942), Ch. II, Sect. vi-viii.

⁸ Milne, *Actual. Sci. et Ind.* #1065, p. 21, and *K.R.*, par. 1, p. 3 and par. 209, p. 192.

In this manner, one may be hopeful that mathematical systems which are based on the abstract analogue of such sets of observers may be of more than purely formal interest.⁹

Milne, in the attempt to justify his hypothesis that there are physical sets of preferred observation points, assumes that observers situated at the centers of the great extra-galactic nebulae form one. Nebulae are, for him, the universal setting from which it may be possible to deduce the laws of the staging of the drama of cosmos and knowledge. The cardinal property of these nebulae is their *motion*. This motion, as it would be described by observers at the center of such nebulae, has one major characteristic: the observed recession rate of other nebulae from the observer, varying as it does directly with the distance from the observer, is the same *for each observer*. For Milne therefore the nebulae are the fundamental cosmic particles, possessed of the single systematic property of mutual expansion, and without a determinate center.

The cosmic fact appears, then, to be one of expansive motion, verified as far back in time as the eons it has taken light from the most distant nebulae to reach our telescopes. Hence, we must attempt to formulate a science of such motion, a science of fundamental *kinematics*. In carrying out this highly abstract task, Milne and his collaborators have created a new physics of *kinematic relativity*: in establishing its axiomatic construction, they have endeavored to form a completely deductive science which requires no extraneous postulates at any point, deduced from an absolute minimum of basic axioms such as are logically required by all possible observers. If

⁹E. T. Whittaker, in his *Turner Lectures of 1947, From Euclid to Eddington* (Cambridge, 1949), Sect. 25, has characterized such requirements as general relativity's postulate of invariance, as "Postulates of Impotence." They are so called because they assert "the impossibility of achieving something, even though there may be an infinite number of ways of trying to achieve it" (*ibid.*, p. 59). Other examples are the Heisenberg principle of quantum mechanics and the second law of thermodynamics. It will be seen that Milne, for good reasons, substitutes one such principle for Einstein's. He does not eliminate such principles from physics; the merit he claims is to have *accounted* for the one he finds valuable in terms which are primitive to it.

Milne is right, one should construct a cosmology by starting at the cosmic scale rather than, with Einstein, by confirming local predictions of laws containing essentially local quantities and then extrapolating.

This new science is thought by Milne to involve a complete break with the experimental method of physics. His is not merely, in his view, a successful theory which lies within that empirical framework: "It is possible, without experimental appeal, to deduce the laws of dynamics . . . and to deduce the law of gravitation. This allows one to escape from servitude to the unsatisfactory Principle of Induction, and converts dynamics and gravitation from empirical sciences to exact deductive sciences."¹⁰ If he is not mistaken, then this theory, developed by him with undisputed technical excellence and virtuosity, should serve to *redirect the course of the philosophy of science, of epistemology, methodology, and metaphysics*. A complete estimate of the validity of Milne's judgment, just quoted, will be presented in two parts. A non-technical exposition of the foundations of kinematic relativity may suffice to help us see that it does in fact contain certain irreducibly empirical elements, and that it is impossible to provide an accurate description of the existent physical universe in a purely aprioristic way.

I

Kinematic relativity is to be based on knowledge of the most immediate and indubitable sort. Milne conceives such knowledge to be obtained by an observer who has perceptions, that is, who is aware of primitive phenomenal sense-data. The observer *perceives* one crucial relation among these data, namely, the asymmetric relation of before-and-after. We begin then with an inescapable *fact*,¹¹ quite disarmingly and frankly admitted as such, a fact which Milne would have us contrast sharply with our allegedly vague and derived notion of a symmetric "between." The symmetric "between" is a hall-

¹⁰ *Actual. Sci. et Ind.*, #1065, p. 24.

¹¹ *K.R.*, p. 9.

mark of spatial awareness, whereas the asymmetric before-and-after characterizes temporal awareness. In Milne's view, symmetry cannot provide a conceptual place for any basically asymmetric relation, and thus will not allow for a world in which there is time. Symmetry infects the entire body of geometric science, modern as well as Euclidean. With this attitude in mind, we see that his kinematic relativity challenges Einstein's relativity in perhaps its most popularized aspect, the conception of a four-dimensional geometrical account of things, unifying space and time into one indissoluble unit. "Henceforth space by itself and time by itself are doomed to fade away to mere shadows, and only a kind of unity of the two will preserve an independent reality."¹²

Milne proposes to make his new science of kinematics into a branch of pure mathematics. Physics, transformed into kinematics, will be a certain part of reality similar, in his opinion, to arithmetic and geometry. The idealized logical "observers" will have as their correlates in the physical world such beings as combine light-perception and memory, for example, an everyday human consciousness. The essential irreversibility of time, connoting for him the before-and-after relation, must be connected with individual perceptions in the representation of a mathematical formalism; the role of such a formalism will be to set down the results of this intuited relation of asymmetric succession in deductive mathematical exactitude, and to preclude any description of physical processes wherein the time variable might "run backwards." This is the heart of the problem: to preserve the one-way nature of this relation in a formalism. Milne is not satisfied with the usual attitude of scientists, for they take the one-way flow of time as a datum imposing certain conditions from outside the system on the interpretation of equations which contain time as a variable.

¹² A widely quoted passage from the scientist who achieved this combination, H. Minkowski. It began his celebrated lecture "Space and Time." See the collection of memoirs, *The Principle of Relativity* (Methuen, 1923), p. 75. However, the time dimension is qualitatively different from the others, in Einsteinian relativity, as shown by H. Reichenbach, *Philosophie der Raum-Zeit-Lehre*, (Berlin, 1928), esp. ch. II.

He insists that such a primitive condition must arise within the system if one is systematically to understand situations by descriptions whose very meaning must involve time.¹³

The theory takes as a primitive entity the "point-percept," the meaning of which is evident by immediate insight. It is, in effect, a sense-datum-now. Since no crucial theoretical significance is served by the use of mathematical points, Milne contemplates the possibility that it may be necessary to take as his irreducibles finite small durations, rather than points. In that case, he proposes to follow Whitehead's process of extensive abstraction¹⁴ and to define "point-events" as the beginning and end of the indivisible units of duration. The observer is then assumed to have the ability to insert (i.e., to conceive) *any number* of point-events after and before two other events which are respectively before and after those inserted. By this logically-permitted operation, based on a non-intuitive extrapolation of psychological sensitivity, a one-dimensional continuum can be forged which can be put in one-to-one correspondence with the real numbers. Whether this continuum of points has the same certitude as some of its member end-points seems doubtful, for the continuum seems to be purely a logical construction whereas the end-points are observed and hence have immediate certitude. The status of this continuum is identical with other continua in theories of applied mathematics.¹⁵

¹³ For a typical recent statement, including comment on the irreversible aspect of the second law of thermodynamics, see H. Weyl, *Philosophy of Mathematics and Natural Science* (Princeton, 1949), Section 23, Part C, "Time's Arrow." It is true, however, that others besides Milne are investigating the implications of basic asymmetry in the hope that it will cast light on present difficulties throughout physical theory.

¹⁴ A. N. Whitehead, *The Principles of Natural Knowledge*, (Cambridge, 1925), Part III.

¹⁵ The consistency of the use of a continuum was justified within pure mathematics by the work of modern analysis. But Zeno's speculative doubts may still arise when applying this idea to physical phenomena. Such doubts, questioning the entire use of infinitesimal calculus in the natural sciences, are not to be discussed here; but it should be mentioned that the justification in natural science has been purely pragmatic whereas the justification within pure mathematics has been systematic.

In terms of the continuum so correlated with actual hypothetical point-perceptions, the observer can be said to have an arbitrarily-graduated clock, the arbitrariness being doubly present: first, in the choice of the zero of time as an arbitrarily selected point-percept; and second, in the choice of events to be correlated with, say, the rational numbers. The problem then arises of comparing readings of such a clock with those of another arbitrarily graduated clock by another observer. The comparison must itself be carried out by a single observer by means of his own perceptions of the second observer's clock. Therefore the basic idea of *communication* becomes necessary, and with it the subsidiary notions of a *means* of communications via the emission and reception of *signals*.

Emission occurs at a particular time instant at an observer. If it be *assumed* that the signal is reflected back to the initial observer by the second observer, and that it arrives at a time subsequent to the moment of emission, then two further conditions must be satisfied: the clock-readings at emission and at reception of a signal which is reflected cannot be identical; and there must be a unique moment for the perceived reception of the reflected signal by the initial observer. We imagine the signal to be a flash of light, the clock to be an irregularly moving hand which rotates around an arbitrarily-numbered circle, and the reflection mechanism to be a mirror so arranged that the initial observer may observe the reading of the second observer. The reading which the first observer sees on the second clock can be compared with the reading on his own clock at the moment of his own perception of the second clock. If each observer sends and receives such signals, he may compare the perception times on and at the other observer's clock, as observed by himself, with the perception times on his own clock. Therefore in addition to his own reading of the time of emission of his own signal, each observer has two other bits of information: a simultaneous perception of the reception time *on his own clock* of the reflected signal, and the time, indicated by this signal, of the moment of reflection at the other observer on the second clock. The process of reflection at the mirror is assumed to be instantaneous. A purely

numerical comparison, such as a graph or a table of values, can be made of sets of the two time readings actually observed by each observer. In this way, the initial observer may exhibit his (arbitrary) clock readings as a mathematical function of the second observer's clock readings, and vice versa. "Congruence" is then defined as existing when the two observers have symmetrical clock graduations, that is, when the two comparisons result in the same function. In general, such identity would not exist between arbitrary observers, each with an arbitrary clock. However, Milne and his colleague, G. J. Whitrow, have devised a method of re-graduating which achieves congruence by using the two observed functions whose formal asymmetry the method is to correct.¹⁶ The success of the method is assured when the two functions are known.

The process of re-graduation is always specified relative to comparisons of knowable graduations; so the situation of logically-possible observers is logically as indefinite with regard to the future of the re-graduated symmetry of two observers' time comparisons as is that of a situation of two psychologically-possible observers. When they are unknown, for whatever period of omitted observations, and especially for an indefinite future after the latest observation, congruence can apparently be assured only by assumed regularity and/or extrapolation of the functions. One might wish, with Milne, to evade the need for inductive generalization but it seems unavoidable at this stage.

¹⁶ Typical of the entire theory, this method is an exercise in group theory. See Milne and Whitrow, *Zeit. für Astrophys.* 15, 270 (1938), "On the meaning of uniform time and the kinematical equivalence of the extra-galactic nebulae." L. Page has remarked (*American Scientist* 38 129, 1950) that Milne's theory imposes restrictions on the time-origins as well as time-intervals measured by the various clocks. Page has shown that the demand for synchronism may be relaxed to one of isochronism without impairing the derivation of the Lorentz transformations. But synchronism is needed for the derivation of the nebular distance-velocity law as well as the striking alternative time-scales to be described below. Stringent synchronism has no obvious physical correlate; nor is it implied by the rest of the theory; hence, evidence for its accuracy must be sought by conventional standards of acceptance.

Since more than two observers populate even his abstract logical world, Milne's next problem is to coordinate the time readings of at least three observers. When they are presumed collinear¹⁷ certain new requirements are thereby placed on the various comparison functions; these requirements are in the nature of restrictions on the apparent *motion* of the third observer, given both pre-arranged congruence between the first and second observers and known motion of the second relative to the first. Sets of such collinear observers, the motions of which satisfy the particular requirements so derived are "linear equivalences" in Milne's terminology. The concept is easily generalized to the ordinary three spatial dimensions; Milne has no need of more. It is a further consequence of these highly general requirements that any linear equivalence remains such upon arbitrary clock re-graduation; hence there is essentially only one linear equivalence in this hypothetical universe of observers, all seemingly different ones being identified by characteristic functions which are intertranslatable. The various equivalences are several ways of describing a logically infinite set of collinear observers, each mode of description referring to the same entities. Each observer remains as a possible initial observer of pure perception sequences in the sense of the development just outlined; he identifies the rest of his companions in terms of these perceptions. Quite clearly, Milne intends the various members of the equivalence to have equal ontological status. He does not, however, explicate the difficulty of transition from a phenomenalist epistemology based on pure perception to his metaphysics of many observers, all equivalent. A separate question arises, in addition to this one, since it is certainly not deducible, by mathematical reason alone, that the solutions of the congruence conditions have other than mathematical existence. The implied effect in the theory as stated is clearly one of a Platonism, with its *a priori* knowledge

¹⁷ A, B, and C are collinear "if B (supposed to be between A and C) at any time t_2 by his clock receives signals s_1 and s_2 from A and C respectively, then signals leaving B at time t_2 by B's clock reach C and A respectively at the same instants as the original signals s_1 and s_2 reach C and A respectively." (Milne, *K.R.*, p. 19.)

that self-consistent mathematical entities and relations are *ante re*. The possibility of genuinely alternative kinematic calculi, akin to alternative geometries, makes this view questionable.

A somewhat similar situation arises in Einstein's relativity theory; there it has generally been recognized that the possibility of constructing a set of more than two equivalent observers is a contingent fact of the world. The assertion of the existence of such a set is synthetic and empirical in the sense that it might be false without invalidating the prior parts of the theory.¹⁸

Both Einstein and Milne assert that a reflected signal will be observed at a later time than its corresponding emitted one. Milne claims this to be *deducible* from a "simple theory of causation, namely that an effect cannot precede its cause."¹⁹ It is difficult to admit such a vague conception of causal connection as a philosophical premiss to be used in justification of the assumption just stated. If a coherent notion of *physical necessity* were available (and it is not), Milne's simple theory of causation might itself be derivable from that. One might thereafter construe the causal hypothesis as a convention concerning events which may or may not be described as causally related. As it stands, though, his causal theory may perhaps best be characterized as a factual hypothesis in which the term "causality" indicates a temporal connection of universality, in this case succession between "causes" and "effects." But the hypothesis may not represent the case. It would doubtless be disconcerting if this were so, prediction being based on it; yet it is hardly self-evident that such causality has been or will always be accurately descriptive of the world, or that, being satisfactory for parts of our experience, it is satisfactory for all experience. In any case, we make an empirical assertion when we say, concerning whatever signal system we

¹⁸ See, for example, H. Reichenbach, *Axiomatik der relativistischen Raum-Zeit-Lehre* (Braunschweig, 1924), especially the axiomatization of light-geometry.

¹⁹ *K.R.* p. 18, and Weyl, *loc. cit.*

actually have (as the perceiving and remembering observers), that our signals have a finite velocity. Within the theory it is an axiom which is independent of the earlier statements about succession and perception at the one observer. The ontological status of the physical signals is therefore just as much in need of explication in terms of the initial phenomenalism as is the similar status of other observers. Their character cannot be deduced from any self-evident statements which have been offered, nor can it be a matter of stipulation.

The use of signals gives us a satisfactory chronometry. Next, definitions of *distance* of the second observer from the initial observer and of *time* at the second observer are given in terms of perception-points, that is, of readings of the initial observer's clock. The initial observer then assigns, *arbitrarily*, as the time at which reflection occurs at the second observer, one-half of the sum of the time reading at emission and the time-reading at reception of the reflected signal. The distance at which reflection takes place (which is then the defined distance of the second observer from the first) will be taken as proportional to one-half the difference of the same time-readings, the constant of proportionality being arbitrary. The differential quotient of these two new quantities will be defined as the radial velocity of the second observer, thus arbitrarily set by the first. This accords with the common-sense idea of velocity as distance per time interval. Finally, the constant of proportionality is equal to the *signal velocity* and hence to be identified, presumably, with the velocity of light. There is thus another empirical element, for the world might logically be envisioned as providing more than one means of signaling under the conditions specified so abstractly. Would two signal systems with differing velocities be precluded logically? If not, would they force us to describe two possible cosmologies? The empirical world has revealed only one; *pure* kinematics would not be so restrictive. Further, we must again presume that for Milne mathematical (and hence abstract) possibility of establishing time-distance relationships and clock-comparisons among various observers, each assigning the same arbitrary signal velocity number, and enjoying mutual symmetry of

comparison functions, implies actual existence of such entities. The arbitrary use, in developing a pure light-signal geometry, of the convention that equal distances shall be compared, by definition, by means of arbitrarily equal time intervals at one observer, together with the use of a fixed light velocity, is not the only possible abstract scheme of time-functions which might have been erected. Nevertheless, it is certainly one which leads to verifiable conclusions of first magnitude. The most noteworthy scheme, perhaps, which is the simplest mathematical equivalence, consisting of particles which start separating at zero time in each particle's re-graduated time scale and which have uniform relative velocities of expansion, leads to the famous Lorentz transformations between their space-time determinations. The importance of a theory from which these transformations may be deduced is considerable; they are the result of a definitely *ad hoc* assumption in earlier relativity theory. Another type of equivalence can be described in which the observers are relatively stationary, and in which their time measurements show absolute simultaneity.

At this point, we can foresee a fundamental result of this theory; namely, that since equivalences can be transformed one into the other and hence, in a physical correlation, they must be alternative descriptions of the same entities, we have more than one possible time scale which the observers, attached to these entities, may use. In particular, we may have the finite time scale attached to the expanding equivalence and the time scale of simultaneity attached to the stationary equivalence. Thus, if the members of an equivalence, as identified by the abstract mathematical requirements of kinematic relativity, can be correlated epistemically with actually sensed or derivatively postulated entities in our universe of physical experience, a great deductive scaffolding will have been provided for a science of the universe, one which allows alternate physical time scales by which to measure natural processes.

Milne has identified the galactic nuclei as forming an equivalence in the sense required by his abstract theory. From it he has deduced, in true Machian spirit, the motion of particles

in equivalent cosmic systems of the universe of galaxies. This, then, in kinematics, is the analogue of a theory of gravity, corresponding to Einstein's geometric interpretation, that is, a theory of the effect of the entire universe on a particle's motion.²⁰

II

Professor Milne leaves one who reads his methodological passages with the impression of a certain *climate* of research standards. He wants deductive rigor, he wants clarity as to fundamental notions, and then he wants a ruthless and thorough examination of the consequences and possibilities implied by the most general application of these notions. He exhorts: axiomatize! define! dispense with induction! beware of intuition with regard to theorems! be logical! In a word, be *mathematical*! The issue involved in Milne's philosophical view of the world becomes quite clear at this point: what is the nature of mathematical truth? This is evident from a consideration of his associated question, "why do the laws of dynamics hold good at all?"²¹ and of his reply, that an abstract system of motion, based on self-consistent (one is tempted to ask, self-evident?) definitions must "exist" in the pattern of a geometry. Indeed, he prescribes kinematics, the science of motion, as *the* cosmological science, rather than geometry, solely because the primitive idea of time-passage permits a logical definition of motion.

Similar axiomatic methods have become widely accepted means for reconstructing in self-consistent form the natural scientific theories which, usually, as a matter of historico-bio-

²⁰ Besides the work of Milne's group in developing the implications of this identification and of this theory, e.g. in deriving such broad results as classical electromagnetic theory (*K.R.*, Part IV) and such special conclusions as the shape of spiral nebulae (*K.R.*, par. 167; *M.N.*, *R.A.S.* 106, 180, 1946; *Astrophys. J.* 106, 137, 1947), see the interesting speculation of J. B. S. Haldane on "A New Theory of the Past," (*American Scientist*, 33, 129, 1945) in which non-physical implications are drawn, especially with regard to a foundation for a theory of evolution, geological and biological.

²¹ *K.R.*, p. 11.

graphical fact, were not systematically derived. As we have seen, Milne's original ideas have a highly empirical source, although the *development* of his thought offers an impressive example of the power of mathematical abstract reason. Still, there are other deductive systems which, it is claimed, have the fertility to yield cosmologies, generally valid from microcosm to macrocosm.²² Are there communicable intersubjective standards to judge which of the apparently incompatible systems is correct, or must we rely on directly intuited apprehension of the truth of their postulates? If the latter, then there is no way by which to settle intersubjective disagreement.

If uninterpreted axioms of a system be treated as implicit definitions of the concepts involved, as is done in the axiomatization of Euclidean geometry,²³ then the theorems are indeed necessary relations among these concepts as *relationally defined*. Such are systems of pure mathematics. When the concepts are put into correspondence with observable entities, the systems become applied. Then the problem of truth is one of confirmation and probability, that is, one of ascertaining how successful the axioms may be when used as descriptive of the world. Here we face the unavoidable fact of induction. It is described by Milne as a mere cataloguing of instances, whereas in his view the before-and-after relation (from which all the rest is said to *derive*) is not such a catalogue. But his allegedly basic fact of succession yields a clear indication that we cannot *know* the future *intuitively* until it is present; whatever knowledge we do have of the future will be conjectured and hence not certain. We cannot make assertions about the future with the same all-pervasive certitude, intuited or analytic, which pertains to mathematical theorems, even when the assertion contain asymmetric relations. For example, we have no certainty that there will be any other observers, nor that comparison functions can be evaluated for all times, nor that the most

²² E.g., Reichenbach's systematic treatment of special and general relativity in his *Axiomatik der relativistischen Raum-Zeit-Lehre* (Braunschweig, 1924) and his *Philosophie der Raum-Zeit-Lehre* (Berlin, 1928), and Eddington's three comprehensive works, (see note 3).

²³ E.g., D. Hilbert, *Grundlagen der Geometrie*, (Teubner, 1930).

elementary law of causality shall hold sway — in general, we cannot know that knowledge of the future is possible, in the sense that Milne insists upon. Even the most completely axiomatized science, formulated in deductive grandeur from totally adequate axioms so that no further empirical statements are needed, must ultimately rest on more-or-less highly confirmed guessing in its predictions about the actual character of the universe. Milne's rejection of the view that deductive connections are analytic rests on his misinterpretation of psychological as logical novelty. If his claims were true, he should be able to spin the nature of things from self-evident conceptions.

His system should rather be construed, first, as a new formal calculus which employs a basic asymmetry as its primitive relation, and second, as a system of applied mathematics which sets up an interpretation of the previously uninterpreted calculus, success being judged in the same way as that of any theory in natural science, axiomatized or not. An Occam might approve a system which has the fewest *ad hoc* assumptions, but he cannot modify the empirical mode of verification, which is unchangeably inductive.²⁴

Theories, or postulates thereof, have often been conceived or suggested without empirical support of any direct sort, occasionally by reflection on the abstract entities and relations of pure mathematics. In addition, scientists have increasingly sought clarification and unification of their views via axiomatic reformulation of those views; in this way they render previously synthetic statements analytic *relative* to the axioms. The latter then provide the existential supports by means of coordinating definitions with the abstract concepts. Our comments are not meant to imply that Milne rejects the identification of theoretical symbols with physical objects by means of coordinating definitions; it is rather that his doctrine of the means of ascer-

²⁴ For an attempted justification of our continued use of this certainly uncertain procedure, see, among many contemporary writings, H. Reichenbach, *The Theory of Probability* (U. of California, 1949), esp. ch. 9 and ch. 11.

taining truth in the physical realm runs counter to the modern history of science in an unsupported fashion.

Milne's possible rejoinder to these critical remarks is clear. He holds a Platonic doctrine of mathematics according to which such strictures as that of Einstein²⁵ have no weight. Ultimately it may be necessary to interpret the choice of either view as a matter of temperament, but it would not seem unreasonable to suggest that Milne's own philosophical outlook, fusing empirical and rationalistic elements, contains an ambiguity in the meaning of "existence." Appeals to evidence are nowhere abandoned; hence, even for him, *verification* must be empirical, not merely in establishing the satisfactory usefulness and meaning of primitive concepts but also to verify the theorems. Appeals to knowledge by acquaintance likewise form an integral part of his basic notions, but this knowledge, not being of the self-evident or at least purely rational character (which may be claimed, say, for the law of identity) provides him with empirical *meaning*. Platonic realism in mathematical philosophy needs no verification: *it rests on its own definition of "Reality."* It carries with it, however, attendant value judgments of empirical as compared with rational knowledge which, in the light of historical experience, should suggest great caution. Physics, as indeed all the sciences of nature, is designedly concerned with the world of natural affairs, the world which has appeared in common to all of us as sensing and sensible creatures. Whatever the ultimate verdict on the attempt to provide a completely reasoned and consistent explanation, the great theories must still be accepted only so far as they agree with what is in the world. Even when "in the world" refers to the entire universe, there seems to be no

²⁵ Einstein has written: "As far as the laws of mathematics refer to reality, they are not certain; and as far as they are certain, they do not refer to reality." (from the essay "Geometry and Experience" reprinted in translation in *Sidelights on Relativity*, (London: Methuen, 1922), p. 28.) See also, C. G. Hempel, "Geometry and Empirical Science," and "On the Nature of Mathematical Truth" (*Amer. Math. Monthly*, 52, 1945) in which this unmystical and more widely held view of the nature of mathematical truth and its relation to the idea of existence is outlined in simple terms.

justification for turning from comparison of our cosmological speculation with the universe as we find it.

When all this has been said, however, there is a fundamental advance apparent in Milne's approach, an advance which may be equally important with the spectacular possibilities of his formulation of the preferred roles of the galactic nuclei. For Milne has taken a first step in bringing the concept of *becoming* into natural science at the most primitive level. He combines it with *being* on terms of complete equality. His logical observer, after all, is just the abstract equivalent of the psychological observer's memory; in this way, the persistence of an ontological object as an identity from moment to moment arises at the same level as the notion of a genuinely irreversible change. Of such logical egos and their active possibility of communication, together with the concept of *becoming*, he has constructed a world. It is suspiciously like our own.

One might well ask him how this desirable yet strange conclusion came to be, for there are many mathematical systems, not all of which have empirical counterparts. Is it not due to his courageous break with accepted theory about the interpretation of empirical groundwork, rather than to a purely rational discovery that physical laws are the inevitable theorems of a system? He has shown how one consistently may describe the universe as a dynamic developing mechanism whose own laws evolve as it does, by using a calculus which inherently eliminates the artificial geometrization of time sequences. As a physical theory of the cosmos and the microcosmos, kinematic relativity has new and striking possibilities, deserving the most careful test; as an object of epistemological clarification, it is neither new nor striking, for despite his claims, it reflects entirely the spirit of modern scientific philosophy.²⁶

²⁶ Professor Milne has drawn certain theological implications which seem either ill-defined or untenable. Since there are two time-scales provided for the world equivalence, composed of the galaxies, and since one of these indicates an actual zero of time measurement, there is some reason to state that the world began at that moment. Milne calls this "Creation," allegedly evidencing a Creator. But this argument is but a simplified form of the argument to a First Cause, which is faced with the fatal defect that no

clear way has ever been shown to halt the application of the causal chain at a numerically first. Furthermore, the application of the term "cause" to a factor defined to be outside of the entire universe cannot be supported without begging the question. Surely it is difficult enough clearly to use the term *within* the universe.

As Professor Haldane has remarked (*Modern Quarterly*, London, 2, 94, 1946-47) such theologically interpreted creation can be disputed within Milne's own theory by referring to the "parallel" time scale which is logarithmically related to the one which indicates Creation; being logarithmically related, the second extends infinitely backward, and being invariant to observation point, it "offers an absolute simultaneity... it may be considered as an absolute time." (Milne and Whitrow, *Zeit. für Astrophys.*, 15, 298, 1938.)

Finally, it should be added that the system proposed by Professor Milne is, as he undoubtedly would agree, theologically neutral. Denial of his own theological preferences in no way seems to imply denial of his cosmology. Only experience or the discovery of inconsistency can do that.

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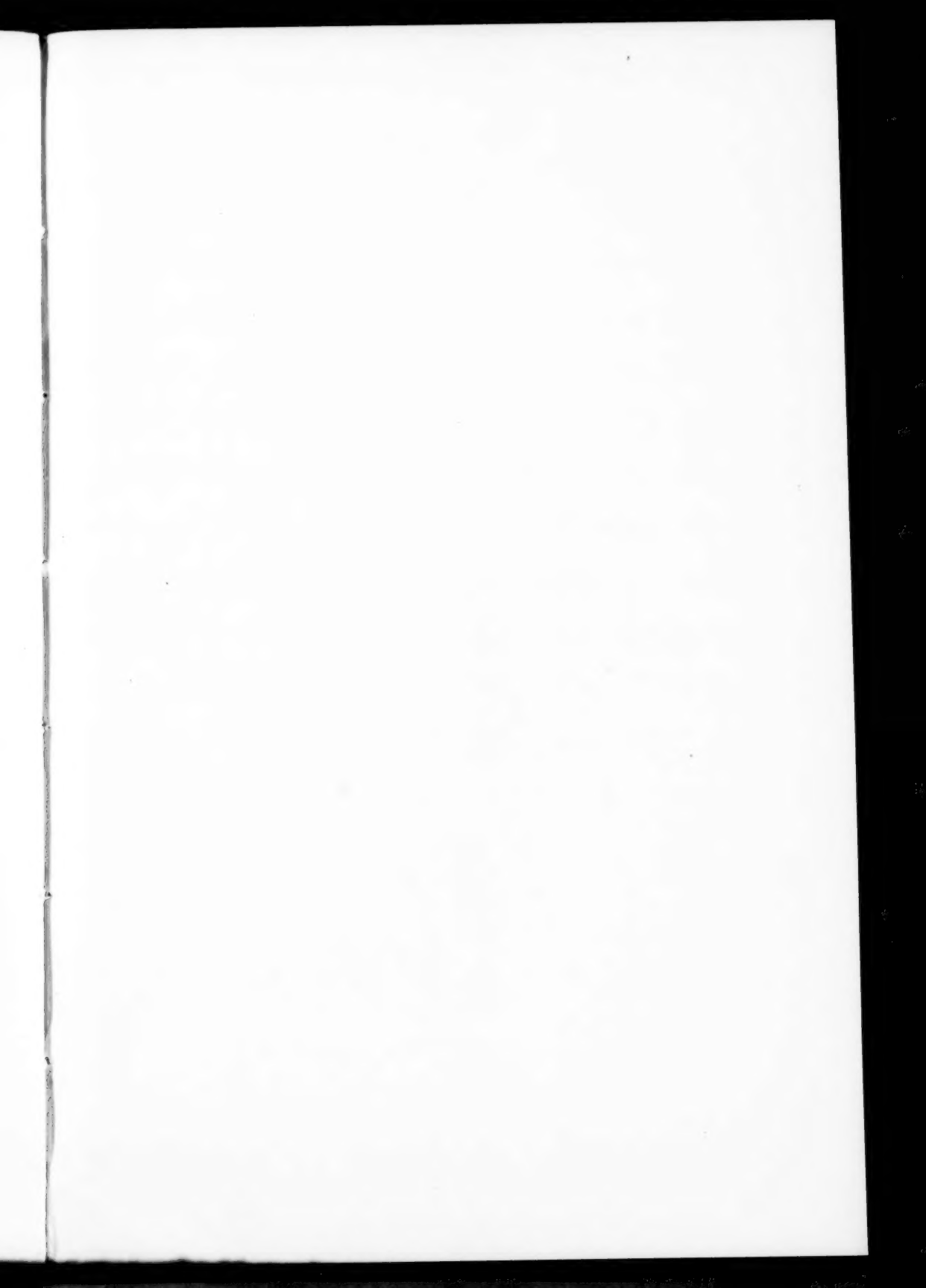
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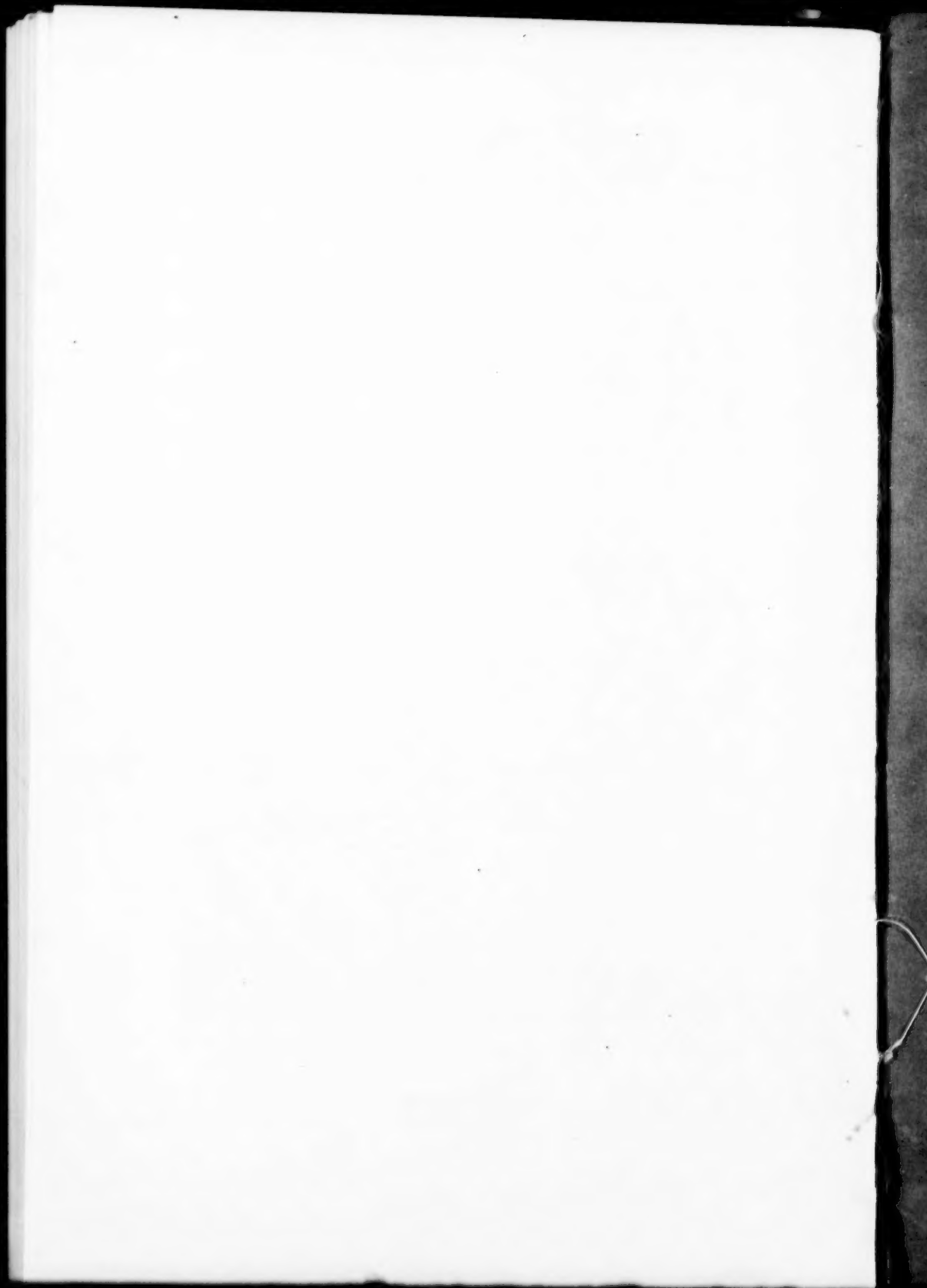
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